A Presidential Address
ON
MEDICAL DIAGNOSIS.

Delivered before the North London Medical and Chirurgical Society on April 9th, 1896,

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GENTLEMEN,—I had some little difficulty at first in deciding what should be the subject of this, my presidential address, but finally came to the conclusion that the question of diagnosis was one of general interest to us all, for in the practice of the profession of medicine and surgery the question which daily arises is, "What is the matter?" and the diagnosis of disease may fairly claim at our hands the paramount attention. For how can we treat our patients correctly or with any scientific pretension—how can we honestly give a prognosis unless we know what organ is at fault, the nature of the morbid process at work, and the extent of its ravages?

"Neque enim credunt posse eum scire
Quomodo morbos curare conveniat, qui unde hi sint ignoret."

Yet how often do we find difficulties arising, how often have we to confess ourselves beaten by the obscurity and complexity of the symptoms and physical signs? The making of a diagnosis does not begin and end with the labeling of a pathological condition or prominent symptom with a long name; the term must be understood and employed in a very much wider sense—it must include a conception as to how the organ has been affected from the first, the exact nature of the disease, and the resulting injury to the body generally as well as locally. To examine a patient who consults us for heart disease and then to say he has morbus cordis is not sufficient. It is not making a diagnosis—we must proceed further and make up our minds as to the nature of the change. Is the cardiac muscle primarily at fault? If so, what is the nature of the disease—is it fatty or fibroid degeneration or myocarditis? Is it a case of valvular disease? If so, what valve is affected and how is it affected? Is it incompetent or stenosed? Or are both conditions present? Another patient consults us for vomiting blood; to say he is suffering from hæmatemesis, again, is not enough, and we must endeavour to find out what the condition is due to. Is it gastric ulcer, carcinoma of the stomach, or cirrhosis of the liver?

During the last fifty years, since I was a student at Guy's Hospital, the advances in the science and art of diagnosis have, indeed, been great and wonderful; and to prove this we only have to look at the large number and the size of the text-books now entirely devoted to this subject. I might mention such works as Vierordt's "Medical Diagnosis," Finlayson's "Clinical Manual," Von Jacksh's "Clinical Diagnosis," and others. Methods of investigation have become more systematic and thorough. Our knowledge of anatomy, physiology, pathology, and chemistry is much more extensive. Many wonderful and ingenious instruments have been invented for investigating hitherto hidden parts, such as the eye, the larynx, and the bladder, for examining the blood, urine, and other fluids. I do not pretend to be practically acquainted with them all, but since I decided on the subject of my address to you this evening I have done my best to investigate some of the results which may be gained by their use, and for this purpose I have spent much time at my old school, where every facility has been afforded me for gaining this information.

A contrast.—How different are the surroundings of the student of to-day to what they were in 1846, when I was a clinical clerk under Dr. Addison. In those days a tablespoon and a candle were the only apparatus available in a medical ward for the detection of albumin in the urine. Now I see in all cases of albuminuria that an accurate record is kept of the amount of urine passed each twenty-four hours, of its specific gravity, reaction, amount of albumin and urea in addition to a description of the microscopical appearance of the deposit, and for this purpose every possible form of instrument and kind of reagent is at hand.

Successful diagnosis is an all-important adjunct to successful practice. In order to make an accurate diagnosis we must recognise abnormal physical signs, and not only recognise them, but interpret their special significance. This knowledge can only be obtained by constant practice, and we cannot obtain it by reading the experiences of others only, although by this means we get to know what to look for and to expect. We require a good general knowledge of anatomy and physiology, for if we do not know the normal structures and functions of the various organs, how can we expect to recognise their numerous diseased conditions?

Importance of morbid anatomy.—A knowledge of morbid anatomy is also of the greatest importance, and that is a science in which we who are general practitioners have little facility for becoming proficient. A good morbid anatomist as a rule is a good clinical physician. We should all become much more proficient in diagnosis, and our patient would in the end reap the benefit, if there were not that popular sentiment against the performance of necropsies in private. How much wider would our experience be if in doubtful cases we had opportunities afforded us of verifying or correcting our diagnosis by a post-mortem examination. How often do we sign a death certificate without any degree of certainty as to the exact nature of the immediate cause of death. I was shown two cases in the wards of the hospital which were supposed to be respectively types of the atrophic and hypertrophic forms of cirrhosis of the liver. One was a woman of alcoholic appearance aged about forty, with marked ascites and no jaundice and with physical signs of decrease in the size of the liver. She was pointed out as a typical case of atrophic cirrhosis. She died, and at the necropsy the case was found to be one of tuberculous peritonitis. The other case was that of a woman, also of alcoholic appearance, aged about forty-five, suffering from jaundice, sickness, pain, and evidence of a very large liver. She was pointed out as a typical case of hypertrophic cirrhosis. She died, and at the necropsy the case was found to be one of carcinoma of the liver. In private practice both would have been certified as cases of cirrhosis of the liver and would have been classed under that heading in the at present useless statistics brought out by the Registrar-General. Morbid anatomy in these cases not only exposed our ignorance but added to our knowledge and rendered the probability of a correct diagnosis being made in similar cases in the future more likely.

The fallacy of lightning diagnosis.—In order to recognise the signs of disease we have especially to employ our senses of vision, touch, and hearing. In many instances we may be tempted to employ our eyes only, making a diagnosis it may be to impress our patients with a sense of our smartness, but it will not pay in the end. We should not get into the habit of making lightning diagnoses. We may succeed brilliantly for a time, but sooner or later a miserable failure will be the inevitable result. However, there are some cases in which we can detect the nature of the disease simply from the general appearance of the patient. The large white man has probably large white kidneys; the prominent eyes—staring, terrified expression—and the enlarged thyroid gland are characteristic of exophthalmic goitre; the broad, expressionless face, with bright-red patches on either cheek, the spade-like hands, the scanty hair, the thick, blurred articulation and monotonous voice, of the patient suffering from myxœdema; the livid cheeks, nose, ears, and the clubbed and livid fingers and toes speak of congenital heart disease; the tremor and general condition of flexion of paralysis agitans; the withered, shrunken, old-mannish appearance of the child of congenital syphilis; and there are other examples too numerous to mention.

Importance of noting slight symptoms.—The severity of the symptoms of any particular disease may vary considerably in different individuals. A strong man may become very ill without his knowing there is very much amiss, whereas a delicate, susceptible woman may feel the slightest ache or pain and attach the greatest importance to any departure from normal health. We should therefore observe the idiosyncracies of our patients, and certainly never let any of them imagine that we treat the description of their symptoms with scorn. Some patients are unskilful in describing symptoms, others are too graphic and elaborate. We must learn to discriminate, and take an accurate estimate of the

evidence before us. We must also remember that if a patient comes to consult us—no matter how slight the cause may seem—there must be some good reason for his doing so, and we should be just as careful with trivial as with grave cases.

Local causes of diseases should be carefully sought for, and we should not be too ready to treat a prominent symptom without finding some adequate cause for it. Every third-rate druggist has a bottle of medicine for every symptom for which he may be consulted. I know of a case which speaks strongly on this point. A woman aged about fifty-five consulted a druggist for diarrhœa and for four months was made the receptacle of the various astringent drugs of the pharmacopœa. She gradually became worse, and her medical attendant then found her trouble was due to carcinoma of the lower part of the rectum! I could give other illustrations on this point, but shall be content by mentioning the curious fact that asthma may be caused by disorders of the uterus and its appendages, and the importance of examining the pelvic organs in this disease when no other adequate cause can be found. In one of the New Sydenham Society's books[1] there is an interesting lecture on this subject by Dr. Alexander Peyer. Many diseases begin acutely with rigor and rise of temperature, and it is thus of importance to determine the manner of the onset. Some of the acute specific fevers—variola, scarlet fever, pneumonia, pleurisy, acute tonsillitis, and influenza—commence, as a rule, in this way. But variola for the first three days until the appearance of the characteristic eruption may be mistaken for scarlet fever. Influenza may be mistaken for scarlet fever. In such instances our clinical experience is found of the greatest value in making a differential diagnosis.

The significance of abdominal pain and of headache.—In many diseases one symptom may stand out prominently and attract all our attention as well as that of the patient. I allude to pain. Abdominal pain is a very common symptom of disease and the causes are legion. It may be due to gastric disturbance or it may be associated with sclerosis of the posterior columns of the spinal cord. Is its nature paroxysmal and colicky? Is it associated with jaundice and tenderness in the right hypochondrium? Then it is probably due to gall-stones. Is it associated with hæmaturia and does the pain run down in the direction of the ureters and cause retraction of the testicle? Then there may be renal calculus. Is it associated with constipation? Then it is important to examine the gums: it may be due to lead-poisoning. Peritonitis is another cause; and if the pain has come on suddenly with collapse it may arise from perforation of one of the abdominal viscera. Deep-seated pain may be due to malignant growths or to aneurysm. Pain is often associated with pulsation of the abdominal aorta. But on this account abdominal aneurysm should not be diagnosed every time we feel the abdominal aorta pulsating. Severe abdominal pain and vomiting may occur in locomotor ataxy, and very often is one early sign of this disease before ataxy is marked. The actual cause is very often overlooked, and such cases have been treated for gastritis, gastric ulcer, or gastric carcinoma. Therefore, in all cases of long continued and severe abdominal pain and vomiting we must examine the pupils and the knee-jerks. If the Argyll-Robertson pupil is found and the knee-jerks are absent locomotor ataxy will be the cause of the abdominal symptoms. Again, abdominal pain may be the most marked symptom of pneumonia or pleurisy, or, on the other hand, may be a prominent symptom of spinal caries. The moral to be drawn is that in cases in which abdominal pain is a prominent symptom a very careful and systematic examination must be undertaken to discover the cause.

Headache is another every-day complaint, and its causes are innumerable and require a very careful and systematic examination before treatment can be adopted. It may be due to disordered functions of the alimentary canal or generative organs; to errors of refraction; to toxic substances circulating in the blood; to alcoholism; to uræmia; to pathological changes in the brain and meninges; to cerebral tumours and meningitis; to diseases of the scalp and the cranium; and to many other causes.

The nervous system.—I have stated that a knowledge of anatomy and physiology is an important basis for diagnosis, and this in particular applies to the nervous system, for a familiarity with its normal structures and functions is indispensable for a recognition of its derangements. We must bear in mind how complex is that structure, with its nerve cells, ganglia centres, and nerve fibres, which conduct afferent and efferent impulses governing the movement and especially the nutrition of all parts of the body. The whole of the nervous system may be mapped out into areas, each of which has a certain connexion with special functions or particular parts of the body. The researches of Ferrier, Schäfer, Horsley, and others have so greatly increased our knowledge of localisation and special function within the last few years that we now know important facts not dreamed of in my student days, as that the convolution on either side of the fissure of Rolando controls the movements on the opposite side of the body; that in the posterior part of the third left frontal convolution the centre for articulate speech lies, and that a lesion here causes motor aphasia; that the visual centres are located in the occipital lobes, and the auditory centres in the first temporo-sphenoidal convolution. This knowledge of cerebral localisation has led to most important results, for now we can diagnose the exact seat of many lesions of the nervous system which are capable of cure by appropriate means. Again, our knowledge of the course of the pyramidal fibres from the cerebral cortex to the muscles and the effects of lesions in the various parts is an important aid to diagnosis. This point can be well illustrated by facial paralysis. If the lower part of the face only is affected and if twitching movements are noticed to occur at frequent intervals on the affected side it will be most probably due to a lesion affecting the facial cortical motor area on the opposite side of the brain. If it is associated with paralysis of the arm and leg on the same side of the body the lesion will be in the opposite internal capsule; if the arm and leg on the opposite side of the body are paralysed the lesion will be in the pons; and if the whole of one side of the face is paralysed and wasting of the muscles has occurred it points to a lesion of the nerve or its nucleus.

The kidneys.—Our knowledge of the diagnosis of disease of the kidneys has been much improved during the last twenty or thirty years on account of the increased care with which the urine is examined, for not only do we submit this important excretion to elaborate chemical analysis, but also take into consideration the variations which take place in its general characters. Deposits are submitted to careful microscopical examination, and by this means most important data for an accurate diagnosis can be obtained. In obscure abdominal tumours a change in the urinary excretion will indicate in many cases that the kidney is the seat of the disease. For example, if there is a large deposit of pus and the urine is acid we think the abdominal tumour may perhaps be a tuberculous kidney or a pyonephrosis; if a further examination of the pus is made and tubercle bacilli are found then we know it is a tuberculous kidney. Again, the variation in the amount passed is of importance. In one case a patient was suffering from a large abdominal tumour which was supposed to be a malignant tumour connected with the liver. A careful record of the daily amount of urine passed was kept and found to be an average of fifty ounces. One day, however, he passed 120 ounces, and when the abdomen was examined the tumour could not be felt. Some weeks afterwards he complained of difficult micturition and pain at the end of the penis. On sounding his bladder a vesical calculus was found. The abdominal tumour had evidently been a hydronephrosis which had been caused by the calculous obstruction.

Diseases of female pelvic organs.—Great advances have also been made in the diagnosis of diseases of the female pelvic organs. Dr. Cullingworth, in a clinical lecture[2] on this subject, says: "To-day I should be ashamed for any of my clinical clerks to be found at the close of their three months' tenure of office unable to diagnose, under reasonably favourable conditions, the size, position, consistence, and mobility of the Fallopian tubes, even if not of the ovaries as well, with a fair amount of accuracy"—a statement which would have been scoffed at a few years ago. These improvements have been brought about by as often as possible confirming the original diagnosis by subsequent examination on the operating table and in the post-mortem room as opportunities offered themselves. The introduction of the dorsal position, in addition to the left lateral position, by means of which a

[1] Clinical Lectures on Medicine and Surgery by German Authors, 1891.

[2] Clinical Journal, 1893, p. 284.

bimanual examination can be more thoroughly conducted, has also been an important factor in bringing about these improvements.

Skin diseases.—In the diagnosis of skin diseases difficulties often arise as symptoms are so liable to differ and they are so rarely pathognomonic. It is of special importance to note the nature and distribution of the lesion or lesions present. Some diseases are very rare but their form so characteristic that the diagnosis is not difficult, as in the case of favus. We must also not forget that an eruption may be factitious—eczema, impetigo, pigmentation may all be artificially produced by malingerers and hysterical young women. It is not, as a rule, difficult to detect the fraud when once our suspicions are aroused. Again, in all cases of dermatitis the irritant should be sought for: pediculi in the hair are often the cause of impetigo, eczema may be caused by objects handled in the patient's trade, and pruritus vulvæ in women by diabetic urine. Cutaneous eruptions may be caused by the acute specific fevers, when the use of the thermometer will be of assistance, yet variola or varicella may be mistaken for acne or impetigo. The diagnosis of possible syphilis as the cause of the skin lesions is by no means a simple matter in many cases and requires all the care and judgment of which the practitioner is capable. Many skin diseases have characteristic distributions: psoriasis on the extensor surfaces of the knees and elbows; lichen ruber planus on the flexor surface of the elbows; acne vulgaris on the face, forehead, and back; and lupus erythematosus on the nose and cheeks. In all cases of skin disease it is of the greatest importance to examine every part of the body affected with the lesion. Many incorrect diagnoses are made through not following out this rule. Psoriasis may affect the scalp and may simulate seborrhœa and be diagnosed as such, whereas a systematic examination would have revealed the characteristic lesion of the disease on the extensor surfaces of the knees and elbows. Some diseases affect the deeper layers of the skin and are characterised by scarring, and the diagnosis between tuberculous dermatitis and syphilis is often extremely difficult on this account. The parasitic diseases may be detected by microscopical examination, which in the case of the vegetable parasites will reveal the characteristic spores and mycelium.

The clinical thermometer.—The clinical thermometer did not come into general use until after the years 1850 and 1851, when very great attention was called to its importance by the papers published on the subject by Traube and Bärensprung respectively. Wunderlich of Leipzig then devoted himself to the study of the temperature in every variety of disease, and his well-known work, which has been translated and published by the New Sydenham Society, is still the standard work on this most important subject. In England the clinical thermometer was first adopted by Parkes, Ringer, and Aitkin. It is now, of course, in the hands of every medical man, and in determining the presence or absence of pyrexia and the course, duration, and degree of pyrexia its value as an aid to diagnosis cannot be over-estimated. We know that the temperature runs a definite course in certain diseases, so that if a careful record has been kept and recorded on a chart the nature of a doubtful case may often be thus cleared up. The sudden rise, the continuous character for five or six days, followed by a crisis, are all familiar to us as characteristic of lobar pneumonia; the gradual rise followed by the continuous type which ends about the end of the third week by lysis of typhoid fever. In this last-mentioned disease we should remember also the importance of taking the temperature for some time after the lysis, for the only indication of a relapse may be the rise of temperature. It is also of great importance to note the state of the pulse- and respiration-rate to the rise of temperature; in ordinary cases, the pulse, respiration, and temperature rise synchronously. In some diseases, however, there is a considerable variation from this; for instance, in typhoid fever with a temperature of 104° F. the pulse may be only 80, and an observation of this point is an important aid to the diagnosis of the case. Again in pneumonia and broncho-pneumonia with a temperature of 104° the respiration-rate may reach 60 or 70 to the minute, and such an observation at once points to the lungs as being the primary seat of the disease. In cases of wasting and weakness without definite evidence of organic disease pyrexia indicates, with a considerable degree of probability, tuberculosis. A single rigor accompanied by a rise of temperature to 104° or 105° may lead to the diagnosis of suppuration, especially if it occurs in a patient who is suffering from gall-stones or renal calculi.

The ophthalmoscope was invented by Helmholtz in the year 1851, and by its means he was able to study the details of the hitherto unseen lining of the fundus oculi, retina, and choroid, and thus was the pioneer of one of our most certain and helpful diagnostic instruments. We may have a patient suffering from œdema of the legs, ascites, enlarged liver, and hypertrophied and dilated heart and albuminuria, and the question which often arises is, Is this a case of primary heart or kidney disease with secondary cardiac trouble? The ophthalmoscopic examination may reveal the presence of albuminuric retinitis, and we forthwith make our diagnosis of primary renal disease. We have another case suffering from pyrexia and diarrhœa which does not present to us the typical picture of typhoid fever. An ophthalmoscopic examination may reveal the presence of tubercles in the choroid, and then a diagnosis of acute tuberculosis is made. In cases of severe and persistent headache also an examination of the fundus oculi is of the greatest importance, for the causes of headache are innumerable. If, however, optic neuritis is found we know we have a gross cerebral lesion to deal with and treat our patient accordingly.

The laryngoscope.—The laryngoscope was first introduced into medical practice by Türck and Czermak of Vienna in the year 1857. Now it is in the hands of every general practitioner, and its use in the differential diagnosis of diseases of the larynx is invaluable. By its means such hitherto invisible structures as the epiglottis, aryteno-epiglottidean folds, vocal cords, and trachea can be examined by the eyes; and syphilitic, tuberculous, and malignant ulceration can be differentiated. In the girl suffering from hysterical aphonia the vocal cords can be seen widely separated through paralysis of the adductors. The deep-seated intra-thoracic aneurysm which is pressing on the recurrent laryngeal nerve and which has given rise to few other characteristic signs may be diagnosed by the discovery of the abductor paralysis of the corresponding vocal cord by the systematic use of the laryngoscope in such cases. New growths may be diagnosed and removed by the aid of this instrument and important facts gained by its routine use.

Examination of the blood.—In the differential diagnosis of anæmia it is of great importance to investigate the conditions of the red and white blood corpuscles and hæmoglobin, and for this purpose several ingenious instruments have been introduced. Vierordt in 1854 was the first observer to determine the corpuscular richness of the blood, and he did so by allowing blood diluted to a known degree to dry on a glass slide and then counting the corpuscles by means of a microscope and micrometer. He ascertained that a healthy adult man should have about 5,000,000 red blood corpuscles to the cubic millimetre. Since then Gowers, Thoma, Zeiss, and Malassez have introduced more elaborate instruments by means of which the percentage number of corpuscles and the percentage amount of hæmoglobin can be determined. The importance of such examinations can be illustrated by the characteristic changes which are generally present in the following diseases. In chlorosis the red blood corpuscles are rarely reduced below 60 per cent. of the normal, whereas the hæmoglobin may be reduced to 20 per cent. of the normal, and the white are not increased. In pernicious anæmia the red blood corpuscles may be reduced to as low as 10 per cent. of the normal, but the hæmoglobin not to a corresponding degree, so that in this disease the individual value of each red blood corpuscle for hæmoglobin is greater than normal—a condition diagnostic of this disease. In addition the red blood corpuscles are changed in shape, and nucleated red blood corpuscles may be found. In leucocythæmia there may be a large excess of white blood corpuscles, and in extreme cases they may exceed the red in number. There is another most important condition in which the microscopical examination of the blood is of importance and that is in malaria, in which disease plasmodial bodies may be detected in the red blood corpuscles. The discovery of these bodies may help us considerably in diagnosing this disease from other fevers and also from the form of the plasmodia in determining the particular kind of malaria.

Examination of the bladder and urethra.—By means of an instrument called the electric cystoscope the interior of the bladder can now be illuminated. Dr. Nitze of Berlin conceived and carried out this idea in 1879. The illumination was derived from a platinum loop. This was, however, supplanted in 1887 by an incandescent lamp, which change

has rendered the instrument much more simple and less costly. Its value in surgical diagnosis has been proved by many surgeons in England, and Meyer of New York in 1889 wrote: "There is no doubt in my opinion (and no surgeon doubts it any more to-day) that cystoscopy has a great future. Of course, we have yet to learn in many respects to recognise the disease in the picture, and may often be mistaken in explaining what we see—just as may occur to laryngologists, and very experienced ones, with diseases of the larynx." This instrument is of especial use in the diagnosis of symptomless hæmaturia. The orifices of the ureters can be examined, and if blood is of renal origin it may be seen issuing from the ureter or ureters. Papillomatous growths, encysted calculus, hæmorrhagic cystitis, and enlarged prostate can be detected—in fact, it is a most important aid to the diagnosis of obscure disease of the bladder. Dr. Nitze has also introduced another ingenious instrument, the photocystoscope, by means of which photographs can now be taken of the interior of the living bladder.

Bacteriology is a very important aid to diagnosis, since so many diseases are due to definite specific micro-organisms which are recognised by their special form and reaction to stains and manner of growth in culture media. Of course, this method of research cannot be carried out by the general practitioner, but at a small cost it can be done for us by the Clinical Research Association. The importance of this method applies in particular to the diagnosis of diphtheria and tuberculosis. So far as the diagnosis of diphtheria is concerned the modern physician does not feel comfortable or satisfied unless in at any rate all doubtful cases of sore-throat the opinion he gives is confirmed by bacteriological diagnosis. The diagnosis of phthisis has become much easier and can be made much earlier and with greater certainty since the discovery of the tubercle bacillus and its significant reaction to certain stains. In all suspicious cases of chronic lung disease an examination of the sputum should be made for these micro-organisms. Cholera is another disease in the diagnosis of sporadic cases of which a bacteriological examination for the comma bacillus is necessary.

Very great interest has been centred during the last few months in the so-called "new photography," the latest and one of the most startling and sensational scientific discoveries with which the name of Professor Roentgen is popularly associated. The chief medical interest in this discovery lies in the fact that bone is opaque and flesh transparent, so that by means of these rays the skeleton of a living body can be photographed, as shown in the beautiful photographs reproduced in our medical journals; and in this way the nature of deformities, obscure fractures, and dislocations can be accurately determined. It is almost impossible at present to realise the full importance of this discovery as an aid to medical and surgical diagnosis; but, judging from the great advances already made, it seems possible that not only injuries of bone and foreign bodies in the tissues may be seen, but the diagnosis of such obscure conditions as renal and biliary calculi will be much facilitated. Another tribute to the immense importance of this discovery is the fact that one of these photographs has been accepted in a court of law as evidence of injury and substantial damages awarded in consequence. I quote from the report which is taken from the *Sun* of March 8th, 1896. "The Roentgen Rays in Court.—The Roentgen rays penetrated yesterday into the Assize Court at Nottingham, where Mr. Justice Hawkins was sitting at *Nisi Prius*. Miss Gladys Ffolliott, an actress, claimed damages from the Nottingham Theatre Company for injuries sustained through a faulty staircase in the defendants' theatre. During the hearing of the case a London medical practitioner produced in evidence negatives of the plaintiff's left foot taken by Professor Ramsay by means of the new 'x' rays. The negatives showed that the bones of the foot had been displaced. Mr. Justice Hawkins remarked that nowadays a man might be sent to an asylum by having his head photographed. Verdict for the plaintiff, damages £76 10*s*."

Gentlemen, I now beg leave to conclude. In doing so may I be allowed to thank you for the honour you conferred on me by placing me in this chair, and may I also express my sincere and cordial thanks to the honorary secretaries of this society, Dr. James Galloway and Dr. E. S. Tait, for the kindness and the able support I have received from them during the whole of my term of office?

THE CAUSATION AND TREATMENT OF MAMMARY ABSCESS.[1]

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IN these days of striking novelties in surgical matters there is always an inclination to commence with an apology when one writes a paper upon a medical or surgical malady of common occurrence, which is ordinarily met with in practice, and the diagnosis and treatment of which are supposed to be generally well known. Such a subject is suppuration within the mammary gland, and I have been induced to bring it forward because of its importance in all classes of practice, and because I feel sure that the operative treatment of mammary abscess as ordinarily conducted is by no means satisfactory in its results. The very commonness of the affection would serve as a sufficient plea for my bringing it before a society where men of all varieties of practice meet on common ground. There are many points regarding mammary suppuration of great interest. Not the least are some of the modern methods of treatment and the frequent diagnostic difficulties that from time to time arise. As regards the causation of these affections, though everyone connects them with suckling and lactation, yet instances occur in practice which are quite inexplicable on these grounds, and it is here that the special diagnostic difficulties arise which renders the subject of mammary abscess so immensely important to surgeons. Taking first the common form of acute mammary abscess I need only state a few figures to show its close relation to lactation. The total number of cases of abscess of the breast admitted into St. George's Hospital between 1870 and 1895 was 200. The right breast was more commonly affected. Both breasts were affected in 13 instances. There were 2 cases affecting males: 1 due to pyæmia and the other to a blow. Out of the 200 cases 169 were directly due to lactation and referred to sore nipples in women of the child-bearing age. 31 were due to other causes; of these, 8 seemed directly attributable to a blow, 1 was due to necrosis of a rib and 22 were due to no certain cause; but of these in 5 instances the abscesses originated on the site of former abscesses, and there was in three a suspicion of the affection being tuberculous. In the 22 cases the patients were either young girls or women between forty and sixty years of age. The youngest were eleven and fifteen and the oldest fifty-eight and sixty-seven years of age. In only 2 cases was the abscess submammary. In the majority of instances the pus was within the gland substance itself. In several of the older patients the abscess was thought to be a solid tumour, and the true nature was only discovered after exploration.

In like manner I have studied sixty cases of abscess of the mamma admitted into University College Hospital for six years, from 1884 to 1890, selecting that period because then alone were full particulars given of the nature of the abscesses and the time they occurred after lactation. Of the 60 cases, 51 were associated with pregnancy or lactation in women of varying ages. The left breast slightly preponderates in order of frequency of attack. Of cases of chronic abscess there were eight occurring between the ages of thirty-five and fifty-one years. In one of these blows were mentioned as a likely cause. Several of the chronic abscesses were only differentiated from scirrhus by exploratory incision, being associated with ulceration of the nipple, and in one the nature of the contents seemed likely to show that the supposed abscess was really an ancient galactocele with inspissated contents. One case of acute superficial abscess occurred in the male breast just beneath the areola, and no cause could be assigned for it. Of 102 cases of abscess related by Bryant[2] 79 occurred during lactation, two during pregnancy, and 21 in non-lactating, non-pregnant women. Birkett[3] in examining 149 cases of mammary suppuration noted that 132 of them occurred

[1] A paper read before the Medical Society of London on April 27th, 1896.

[2] Diseases of the Breast.

[3] Holmes's System of Surgery, vol. iii., p. 434.

in suckling women. Among 72 cases published by Nunn 58 occurred in lactating women, 7 in pregnant women, and 7 in non-puerperal women. Of 230 cases collected by Jamain and Terrier[4] 183 were connected with the puerperal state, 47 occurred during pregnancy, and 34 were not connected with either condition. McClintock[5] preserved notes of 82 cases of mammary abscess and found the preponderance on the left side. Of all the abscesses he had seen the vast majority made their appearance during the first six weeks of lactation. As regards the time after parturition that mammary abscess occurs I find the greatest variability. Some of the cases occur as early as the first, others not until the fourteenth month. Birkett[6] found that in 116 cases half of them occurred as early as the first month after parturition, and a large proportion of these as early as the first week. In 50 of the St. George's Hospital cases collected by myself, where the time after parturition is noted, the majority occurred later than this, 38 cases occurring in the period between the second and the fourth month. Bryant[7] found that out of 102 cases 68 occurred in the first two months after pregnancy. It would seem very difficult if not impossible to strike an average regarding the exact month at which lactation abscess is the more common; but Nunn, Birkett, and Bryant are all agreed that this affection is most frequent in the early and late months of pregnancy. Birkett[8] estimates that half of the cases are associated with defective or sore nipples. Personally, I believe the average is far higher than this, and I have never seen a case of acute mammary abscess in a young woman without being able to observe, by the aid of a lens, breaches of surface in the vicinity of the nipple by which organisms might readily enter the lymphatic channels. Through the courtesy of Dr. Griffiths and Dr. Grigg I have been able to inspect the records of Queen Charlotte's Lying-in Hospital, and I was greatly struck at the remarkable infrequency of mammary abscess at that institution. Out of 2000 cases examined by myself, taken by selecting 200 at a time, out of different years in the practice of various physicians, to my surprise not a single case of mammary abscess was found. The medical officer was obviously on the alert to note such conditions, for cases of "milk-engorgement" with threatening inflammation were here and there noted. It is true that the majority of parturient women were early discharged from the hospital, say, in a fortnight or three weeks; but, on the other hand, it must be pointed out that most of the patients were primiparæ in whom the nipples are often badly developed, badly cared for, and frequently sore. The cause was not far to seek in the precautions taken by the physicians to ensure the cleanliness of the nipples and of the infant's mouth, and this brings me to enunciate the first important proposition of this paper, that in the vast majority of cases acute mammary abscess, whether during lactation or not, and in either sex is due to absorption by the lymphatics of organisms, which enter abrasions on the nipple or areola. The common organisms found on the skin can nowhere be more abundant than in the axilla or about the areola of the mamma—parts moist and protected and affording every opportunity for active increase and growth. Moreover, round the nipple is a fossa kept moist by the secretion of especial sebaceous glands, and in such a locality organisms most abound. The least breach of surface is inoculated as surely as though the surgeon had rubbed in the virus intentionally.

During lactation the vascularity of the breast and the rapidity and vigour of its lymphatic circulation render absorption very marked. The organ is engorged with blood and full of an animal fluid, affording an excellent medium for the prolification of organisms. All these considerations are sufficient to explain why the least breach of surface about the nipple of a lactating breast so readily leads to abscess. Modern investigations into the true causes of suppuration exclude engorgements of the mamma as having anything to do with mammary abscess except as a predisposing cause. In former days the milk was thought to be the cause of mammary and puerperal affections. Thus, puerperal insanity was termed "mania lactea" and iliac phlebitis was commonly termed "milk-leg." These erroneous terms were first publicly denounced by Meigs, who applied the contemptuous epithet of "milkmen" to his professional opponents. The organisms found on the skin capable of originating suppuration are probably numerous and need not here be enumerated. Modern writers on dermatology, especially in Germany, have recognised the fact that many of the suppurative affections of the skin associated with local infective qualities, as boils, pustules, and impetiginous eczema, are due to the entrance of organisms, especially staphylococci, by minute abrasions or by the mouths of the ducts of the sebaceous glands.[9] Dr. Slater, bacteriologist to St. George's Hospital, has kindly examined for me the pus taken from acute mammary abscess. In all of the cases abundant staphylococci were found, principally the staphylococcus aureus. Jamain and Terrier are of the same opinion.[10] "Abscess of the breast," write these authors, "is the result of infection." The most common agent is the staphylococcus, sometimes the streptococcus, and, according to Bumm, in exceptional instances the gonococcus. In accordance with the view that all cases of acute mammary abscess are due to the entrance of organisms from the neighbourhood of the nipple, I must view with doubt those cases of so-called acute idiopathic abscess that occur in the unimpregnated condition. Among the St. George's Hospital cases are found instances of acute abscess occurring in girls as early as the age of fifteen and eleven years, and no apparent cause was to be found. In neither of those cases was an examination made of the nipple and areola with a lens, and without such precaution an abrasion may be readily overlooked. I had an opportunity of observing an important case which bears out this view under the care of Mr. Pick in the wards of St. George's Hospital during the past year. A middle-aged, healthy-looking single woman had noticed for about a year that the left nipple was occasionally "a little sore." A week before admission she had complained of acute pain in the left breast with some swelling. There was an apparent tumour the size of an orange in the left breast, hard but markedly tender, with a sense of elasticity towards its centre and a faint red blush on the skin. At the base of the nipple was a small abrasion covered by a scab. The appearances were very similar to scirrhous cancer. An exploratory incision evacuated creamy pus, which was examined by Dr. Slater and found to contain the staphylococcus aureus in abundance. The abrasion on the nipple might readily have been overlooked without close examination.

Although in the numerous instances where chaps and excoriation about the nipple become infected with organisms, the staphylococcus—especially the staphylococcus aureus—appears to be common, yet there is nothing to prevent organisms of a more virulent nature from entering the tissues. This will perhaps explain cases which the older writers used to term diffuse phlegmon of the breast, where the tissues became gangrenous and the patient rapidly sank. Such cases are certainly rare. I have never seen one, and they are scarcely mentioned by modern surgeons. Velpeau[11] notices the case of a healthy and powerful young woman, who was neither pregnant nor recently confined, who was attacked with what was considered to be "erysipelas" near the left nipple. The swelling increased with a rapidity similar to that observed in the scrotum, eyelids, or cellular tissue elsewhere. A large gangrenous patch formed over the external half of the gland and the patient rapidly sank. In such a case modern investigation would probably have discovered such organisms as streptococci and the bacillus septicus.

The cases, says Spiegelberg, in which abscess of the mamma is part of general septic infection must be very few. Rokitansky mentions the occurrence, and other cases are related by McClintock and one by Spiegelberg[12] himself. McClintock's case of abscess due to general septic infection is referred to in his clinical memoir on diseases of women (page 325). "Only one example has fallen under my notice in which I felt satisfied the abscess of the breast was purely symptomatic. In this instance it succeeded to uterine phlebitis. An enormous swelling, attended with great pain and some discolouration of the skin, formed in the superior part of the right mamma extending upwards to near the clavicle. On dissection, an immense quantity of unhealthy purulent fluid was infiltrated throughout all

[4] Manuel de Pathologie et de Clinique Chirurgicales, tome iv.; Maladies du Sein, p. 686.
[5] Clinical Memoirs, pp. 309-310.
[6] Holmes's System of Surgery, vol. iii., p. 435.
[7] Diseases of the Breast, p. 25.
[8] Op. cit.
[9] Malcolm Morris: Diseases of the Skin, p. 327.
[10] Manuel de Pathologie et de Clinique Chirurgicales, tome iv., deuxième fascicule, p. 681.
[11] Diseases of the Breast, p. 31.
[12] Text-book of Midwifery, vol. ii., p. 408.

the structures of the part." The records of the Middlesex and University College Hospitals show us no examples of pyæmic abscess of the breast, and it is not mentioned by writers of repute. I have only been able to find one case of abscess of this nature in the records of St. George's Hospital in twenty-five years, though it is right to point out that in fatal cases of pyæmia a small abscess in the breast may readily have been overlooked. A feeble man was admitted into St. George's Hospital on July 30th, 1884. He was too ill to give an account of himself, but it was gathered from his wife that he had been ailing for about ten weeks with "aches and pains all over him." Five weeks before admission a painful swelling began to form in the left breast and right nipple. On admission a large abscess was opened in the left breast, and an incision over the right inner malleolus was made through brawny indurated tissue. This patient remained in the hospital for nearly seven months with all the symptoms of chronic pyæmia, abscesses being opened in the buttock, the calf of the leg, and the sterno-clavicular articulation. He finally recovered after a severe and protracted illness. The primary focus of infection was doubtful, but abscess undoubtedly first formed in the left mamma.

I have asserted that the vast majority of cases of acute mammary abscess are caused by the direct action of organisms which enter the lymphatic channels. There yet remains another possible method of infection which is of the highest interest and which possibly has not received the attention it deserves—i.e., the entrance of organisms along the milk ducts themselves. I have already referred to the fact now well known among dermatologists that organisms may enter the sebaceous glands of the skin and thus produce the phenomena of boils and pustules. Seing that the breast is only a highly differentiated sebaceous gland one suspects that the same might here occur. Nocard of Lyons produced tuberculous mammary abscess by injecting tuberculous virus into the milk ducts of a lactating goat. Boissard in a clinical lecture delivered in Paris in 1893[13] speaks very positively of the invasion of the milk ducts by streptococci and staphylococci. He terms the resulting suppurative affection galactophoritis. Chassaignac called the disease canalicular intra-mammary abscess. Nyeth[14] relates the case of a woman aged forty-two years who was non-lactating and affected with bilateral mammary abscess which burrowed through and destroyed both breasts. He terms the case infection of the mammary gland through the nipple and galactophorous ducts. The destruction was so extensive that both breasts were ultimately amputated, which seems a very severe remedy. The branching nature of the abscesses along the milk ducts seems especially to impress the writers upon galactophoritis. It is always open to doubt in these cases that some breach of surface does not really exist, and although the experiments of Nocard place it beyond doubt that infection by the ducts is possible it is certainly not common. For three years I have closely examined a number of cases of mammary inflammation and abscess without finding a single case where I could certainly attribute the abscess to infection through the milk ducts themselves. Moreover, in 1894 Professor Sherrington and myself performed two experiments at the Brown Institute which had a negative result. In a lactating cat and a lactating rabbit milk was squeezed from the mammary gland, and where the ducts were empty and ready for absorption pus was well rubbed into their orifices and allowed to dry there. In one case fresh pyæmic pus was used, in the other secretion from a tuberculous abscess. In neither of the cases did any reaction or alteration occur. I think these two experiments, which were carefully done, go some way to show that suppurative processes do not readily pass along the milk ducts of animals. What the effect of gonorrhœal pus upon the milk ducts of the human subject may be it is, of course, impossible to prove by experiment; but judging by the way it affects the urethra one would imagine that purulent inflammation would readily result. The principal importance of purulent inflammation of the milk ducts are the serious results which may possibly occur to the infant. We hardly yet quite understand the extraordinary influences which the mother's milk may exercise on the infant for good or bad. We, indeed, are aware that certain drugs are excreted with the milk and that emotional disturbances and febrile attacks on the part of the mother have deranged the digestive system of the infant. The presence of pus in the milk would be likely to cause very serious consequences, and I recommend this investigation especially to those who are interested in the dietary and management of young infants. Dr. R. A. Gibbons[15] relates a most interesting example of fatal and acute purpura hæmorrhagica in a child. The case is a very striking one, and one can hardly doubt on considering it that the condition was due to the pernicious effect of pus in the milk. The child had suffered from severe diarrhœa and was progressing well upon asses' milk until suddenly he became extremely ill with severe epistaxis and all the familiar symptoms of hæmorrhagic purpura. He died after an attack of severe hæmatemesis. About six days previously to his death his mother noticed a thick sediment in the milk, and on inquiry being made the donkey which supplied the milk was found to be suffering from abscess of the udder. Dr. Gibbons states further to me: "I know of two cases in which mammary abscess was developed, and before the suppuration was pronounced the infants were ill. One of these cases, a wet-nurse, I admitted under my own care at the hospital, and she had several abscesses of the mamma."

The influence of blows in causing abscess of the breast is well known. When suppuration occurs in the male breast it is usually due to this cause. Bryant[16] found that of 12 cases 8 were attributed to local pressure or injury, causing extravasation of blood. I have notes of 3 cases where abscess of the male breast followed a kick, a blow from the horn of a cow, and the pressure of a shoemaker's last. In these instances it seems quite plain that a communication is established between an area of tissue containing extravasated blood, the resistance of which is impaired, and the external parts through the torn or injured ducts, and hence organisms may enter and produce injurious effects. Abscess in the breast of infants has been frequently recorded and appears to be largely a preventable malady. The milky exudation which flows from the nipples of some infants is almost entirely due to disintegration of the central cells of the columnar epithelial masses of which the primary gland is formed. When ignorant nurses in these cases pull or rub the nipples a breach of surface is effected by the rupture of a milk duct or abrasion of the integument of the nipple, and, organisms entering, an abscess is the result. In the well-conducted large "lying-in" hospitals of this city abscess of the breast in infants is practically unknown, yet the swelling and hyperæmia associated with secretion of spurious milk are not uncommon and often lead to feelings of alarm in the mind of the medical attendant. A case of mammary abscess in an infant three weeks old is related by Dr. Stephen of Lettercairn.[17] It is said to have been caused by "retention of milk." The child, a female, was sixteen days old when the right breast inflamed, pointed, and was opened, when about an ounce of thick greenish pus escaped. On examination a milky secretion was found issuing from the left breast, which was examined with the microscope and found to resemble the maternal milk except that the latter contained more corpuscles. A case of double mammary abscess in a male infant is related by Dr. Wilks of Ryde.[18]

Attention being drawn to the subject, a number of cases of abscess in infants are recorded by various practitioners.[19] Most observers refer the occurrence of the abscess to the practice prevalent among ignorant nurses of pulling and rubbing the nipples. Dr. Robert Barnes[20] backs up this assertion and states that when he was house surgeon to a lying-in hospital he encountered several cases of abscess in the breasts of infants due to the manipulations of nurses. Numerous other instances may be found in surgical literature where experienced practitioners attribute cases of abscess in infants to this practice.

In cases of swelling and engorgements in the breasts of infants were the attendant content to keep the parts about the nipple scrupulously clean with a very dilute mercurial wash and to apply graduated pressure with cotton-wool and bandage the phenomena of abscess would probably never occur. Suppuration in connexion with new growths in any part of the body is extremely rare, and the same is true of new growths of the breast. Abscesses may, however, be found in the neighbourhood of ulcerating cancer, and the same phenomenon is sometimes observed in other parts; thus

[13] Semaine Medicale, 1893, p. 499.
[14] New York Medical Journal for 1890.
[15] Medical Times, Jan. 3rd, 1885.
[16] Diseases of the Breast, p. 53.
[17] Brit. Med. Jour., July 25th, 1874.
[18] Ibid., Aug. 1st, 1874.
[19] Ibid., Aug. 8th, 1874.
[20] Ibid., Aug. 15th, 1874.

we find abscess of the neck with ulcerating epithelioma and abdominal abscess with ulcerating carcinoma of the intestine. In very exceptional cases the cysts of sarcoma or adenoma may contain pus. Should they be artificially inflamed or inoculated with septic material, as by the introduction of a dirty trocar, suppuration is, of course, not uncommon. In the days when caustics were employed to remove cancers of the mamma, surrounding abscess and cellular inflammation were often enough exemplified. In the year 1867 a patient was treated in St. George's Hospital for scirrhus of the left breast with the chloride of zinc paste inserted in the form of arrows into the diseased mass. The whole breast sloughed out, but severe rigors and fever ensued, and a large abscess formed in the other breast. The patient died apparently from pyæmia. A good instance of abscess of the breast in association with scirrhus is the following. A woman aged seventy-six years was in St. George's Hospital in 1883 with a hard scirrhous cancer growing in the left breast and which had existed for two years. Lately the tumour had ulcerated, the nipple was retracted, and the skin adherent. There was a large abscess stretching from the nipple to the axilla. The abscess was opened and much foul pus evacuated. The tumour and pectoral muscle to which it was adherent were removed. The patient recovered favourably. A single woman aged thirty-three years was in St. George's Hospital in 1889 suffering from a tumour of the left breast. She stated that this had existed for six weeks, but the history was very doubtful. Her mother had died from uterine cancer. The patient had always suffered from a painful and retracted nipple. On examination there was a large, round, tender, movable swelling in the upper part of the left breast and the skin was non-adherent. There were some enlarged axillary glands. At consultation exploratory incision was decided on. This being performed, pus was discovered and the sac of the supposed abscess with the surrounding breast tissue dissected out. It was later discovered that papillary growths were present on the walls of the sac. Thus the case was really one of suppurating cyst. Such instances are exceedingly rare. In the past year I saw my colleague, Mr. Bennett, operate upon a large cystic sarcoma. One of the cysts discharged pus abundantly and there was practically a sinus communicating with a large abscess cavity. This had resulted from a puncture with a lancet made outside the hospital into one of the main cysts in connexion with the growth, allowing the cystic cavities to become septic.

Having thus discussed the probable true pathology of the acute forms of mammary abscess a word may be said as to the position and effects of purulent collections within the gland. In nearly all our text-books the division is made into the supra-mammary, the intra-mammary, and the sub-mammary abscess. As regards the first variety, the pus forms immediately beneath the skin of the areola, and in a considerable number of cases is doubtless due to suppuration in some of the sebaceous structures (glands of Montgomery) which exist in that position. As regards the sub-mammary abscess I may at once state my belief that abscess really beneath the gland is far more rare than is generally believed. I may here state that I have never seen a case of true sub-mammary abscess except as a consequence of caries of the ribs or empyema. I have, indeed, been shown examples where the breast has been pushed forwards as though by pus behind it, but in all of them I have found in operation that the purulent collection has been in the deeper part of the mammary gland itself and not entirely beneath it. In short, it may be said that the majority of mammary abscesses of gravity or significance are found in the substance of the breast itself. Great havoc is wrought by untreated suppuration in the breast. The abscess burrows extensively and in a branching and irregular manner so that numerous pockets or recesses are formed and multiple "pointings" and sinuses may only too readily ensue. A fatal result from septicæmia very rarely occurs, but in severe cases the patient may be invalided for many months and suffer very severely. Sinuses may be so persistent, discharges so profuse, and destruction of the mammary gland so great that amputation has even been thought needful, as in the following case.

A married woman aged forty-four years was in University College Hospital in 1881. She had had five healthy children and then six miscarriages. Beyond this there was no suspicion of syphilis and no symptoms or history of tuberculosis. She had never suckled with the left breast which had been inflamed and tender for about eight weeks. The upper and inner part of the left mamma from the third cartilage to the xiphoid was firm, tender, and lobulated, the skin being red and adherent over low rounded prominences. Three sinuses near the nipple were discharging thin yellow pus from a superficial abscess. The liver and spleen were enlarged, smooth, and not tender. Menstruation was normal. The evening temperature was raised. The gland was described as riddled with sinuses and was amputated under antiseptic conditions, and the wound speedily healed. The gland was indurated, traversed by sinuses with granulating walls, leading to a cavity beneath the breast. The ducts were full of soft caseating material.[21]

In the breast it especially happens that abscesses are prone to become constricted in one part, where the pus has burrowed through a fascia or intra-mammary septum. The abscess then assumes a shape which may well be likened to an hour-glass. This most important variety of mammary abscess is too little noticed in modern times, but was long ago well described by Velpeau under the term "abscès en bouton de chemise."[22] I have seen several examples of this condition. The abscess shows itself as a subcutaneous swelling, and if the usual practice is adopted of making an incision radiating from the nipple the discharge will continue indefinitely: the true explanation being due to the fact that the main bulk of the pus is found deep in the substance of the gland communicating with the collection found under the skin of the areola by a narrow and sometimes sinuous channel of considerable length. I shall refer to this variety of abscess again when speaking of the subject of treatment, and meanwhile I may only point out that the likeness of the shape of the abscess to a shirt button as stated by the French writer is peculiarly appropriate.

I propose next, as briefly as possible, to pass in review the pathological causation of the more chronic varieties of mammary abscess which, though comparatively infrequent, are not less important than the acute on account of the numerous diagnostic difficulties and errors to which they give rise. And first it will be convenient to consider the influence of tubercle in producing abscess of the breast. Sir Astley Cooper noticed long ago the existence of "scrofulous tumours" in the breasts of single women; the skin becomes softened over them and finally gives way with a discharge of thin watery or curdy pus. The axillary glands are prone to share in the mischief, becoming enlarged and slowly suppurating. Dr. Charles A. Power[23] reports a case operated upon by Bull in 1886. This writer finds authentic records of 35 cases. Of these, 34 were in females and 1 in a male. Of the 34 women, 22 were married and 5 were single. In 8 these conditions were not mentioned; 21 of the 22 women had borne children and 6 had suppurative inflammation of the breast, while 3 had had inflammation not going on to suppuration. In 18 the right breast was affected; in 14 the left breast, and in 1 both glands. The youngest patient was seventeen years and the oldest fifty-two years. Excellent examples of this affection are related by Hebb and Shattock in the Transactions of the Pathological Society for 1888, and an extensive bibliographical list is given by Shattock in THE LANCET of June 8th, 1889, which comprises most, if not all, of what has been written regarding the subject up to that date. Payne[24] has related a remarkable example of tuberculous abscess near the nipple of a child who subsequently died from general tuberculosis. The important question of the transmission of tubercle by a mother to her child from the milk was discussed in this case. Most opinions were in favour of the possibility of this, though one observer pointed out that he believed Colles' law held good in tuberculosis as well as in syphilis. Personally, I have met with six cases of tuberculous abscess of the mamma, but I will only quote one of them, which will serve as an example of the others. In June, 1893, I saw at the Hospital for Women and Children in the Waterloo-bridge-road a pale, emaciated, worn woman aged forty-three years who had the scars of old gland disease in her neck and who had lost two children from phthisis. She herself had twice experienced attacks of hæmoptysis and had suffered with the left breast for about twelve months, "a lump" having broken and discharged. On the axillary aspect of the left mamma was a ragged cavity with livid undermined edges. The axillary glands were enlarged and one of them distinctly fluctuated. Close to the abscess cavity the breast was much indurated and

[21] University College Hospital Reports, 1881.
[22] Velpeau: Treatise on Diseases of the Breast, p. 75.
[23] Annals of Surgery, vol. xx., 1894.
[24] Meeting of the Pathological Society, May 25th, 1889.

thickened. The discharge was thin and watery, but no tubercle bacilli were found therein. The axillary abscesses were opened and the ulcer scraped and dressed with iodoform. It never soundly healed and the woman would not consent to any more radical measures being adopted. As an instance of this affection occurring in a man I may quote the following. The patient, aged thirty-one years, was in the Westminster Hospital under Mr. Macnamara on Sept. 20th, 1893. Six months before admission he had noticed a lump in the left breast, which was painless. No history of syphilis was obtainable, but the man stated he was struck with a bar on the part a year previously. The tumour is described as forming an indolent lump, movable and not affecting the skin; the nipple was normal. There was slight glandular enlargement in the axilla. A considerable portion of the breast was removed with the caseous mass, but the affected glands were apparently left.

It would serve little useful purpose to quote numbers of those cases, for their pathology and clinical significance are very similar to tuberculous maladies occurring elsewhere. The abscess may be singular or multiple, and the surrounding breast substance healthy or more commonly riddled with small cavities containing caseating material. Thus the French writers will divide these cases into disseminated isolated tubercle, confluent tubercle, and "cold" abscess.[23] Practically speaking, tubercle of the breast will seldom or never come before the surgeon until its grosser symptoms are manifest. It is especially important to note that the bacillus is not always found in the discharge and the presence of caseating material on the walls of the abscess and around it is the principal distinguishing sign to the naked eye.

The symptoms of these important abscesses may thus be summarised. They are indolent in progress, forming chronic—and often—hard lumps in the breast of those who commonly exhibit signs of the tuberculous diathesis or have marked hereditary proclivities towards tuberculous disease; the skin is commonly slightly reddened over the centre of the swelling; and finally, when fluctuation occurs and thin, watery pus is evacuated, an unhealthy ulcer with livid, overhanging edges and feeble granulations is generally left. The axillary glands are very often affected, and this, together with the hardness of the swelling in its earlier stages, has probably led to the diagnosis and treatment for cancer being adopted more frequently than surgeons are apt to allow. While exceptionally occurring in very young or in old individuals it may with truth be said that the majority of chronic abscesses of the mammary gland are not tuberculous and their pathology and causation are matters of the highest interest and clinical importance. Typical cases of this nature are found in women forty years of age and upwards in whom lactation has long been in abeyance and in whose cases apparently no known cause can be adduced. I have already stated my belief and quoted a case in point that the true explanation of many of these obscure cases is the entrance of organisms through some slight breach of surface on the nipple or at its base. Another pathological point of great interest and importance as regards the pathology of these abscesses is the frequency with which one finds a history of antecedent abscess or inflammation in the breast, it may be many years before. So frequently do I find this, that one cannot doubt but that many chronic abscesses of the mammary gland are what were well termed by Paget "residual abscesses."[24] We have at present no certain means of knowing how long a time organisms may lie latent within the tissues, to be started into activity by some form of stimulation, and the whole question of the latency of organisms of disease is an untrodden ground rich with interest and importance. Some of the several instances I have seen of chronic abscess arising in a mammary gland, the seat of old-standing suppurative mischief, may now be quoted.

A married woman aged forty-two years was admitted into St. George's Hospital on Aug. 20th, 1888. She had been married twenty-three years and had borne ten children. Her last pregnancy was four years ago. Sixteen years before admission she had an abscess of the right breast, which had burst. Since then she had never been able to suckle with that breast. Six weeks ago, with no apparent cause, the right breast became painful and gradually swelled, and finally another abscess burst in the exact site of the former one. There was a sinus in the breast leading into indurated tissue. These conditions were cured by ordinary treatment. A married woman aged forty years saw me at the Waterloo-bridge-road Hospital for Women on Nov. 25th, 1874. Her right breast had become painful and swollen without any known cause for eight weeks. She had had twelve children and four years ago had two abscesses in the right breast. The scars of the sinuses resulting were still to be seen. Her last child was born four years ago. On examination the right breast was irregularly swollen and just internal to a deeply retracted nipple were two rounded, red, fluctuating swellings, obviously abscesses. These were opened, scraped, and the tube brought out below as will be hereafter explained. The pus contained the staphylococcus aureus in abundance. It is only right to point out that although in a number of instances of chronic abscesses of the breast there is a history of past suppurative affections, yet cases are met with where no such explanation, or, indeed, any rational explanation, is possible. These abscesses may occur in any part of the mammary gland but are commonly deeply seated. They are surrounded by much dense indurated tissue and the contents are thick and inspissated. From time to time surgeons have drawn attention to the extreme similarity between these affections and scirrhous cancer, and even with our modern knowledge diagnostic mistakes between chronic abscess and cancer more frequently occur than surgeons are willing to allow.

The symptoms of acute mammary abscess are so well known that it would be idle for me to attempt to enlarge upon them. Yet cases are related where acute inflamed cancer exactly simulates them. Mr. Howard Marsh, in vol. xxiii. of the St. Bartholomew's Hospital Reports, has recorded an admirable example of this condition. A most remarkable case of inflamed carcinoma simulating abscess was under the care of my colleague (Mr. Dent) at St. George's Hospital in March of this year. The patient was a pale, emaciated, wan-looking, single woman aged thirty-seven years, and her right mamma had been getting swollen and painful for three months. The symptoms of abscess were all exemplified in redness, swelling, heat, and pain, with elasticity and fluctuation, but the pain was "shooting," not "throbbing," in nature and the skin over the swelling showed the appearance of *peau d'orange*. An incision revealed a breaking-down growth with a cavity in its centre full of blood and serum. Microscopically the growth after removal proved to be scirrhus. The diagnostic importance of the symptom of *peau d'orange* was thus shown to be very great. It is otherwise with the chronic variety of mammary abscess. The depth at which these abscesses are situated, the induration of the tissues round them, the frequent co-existence of a retracted nipple, and chronically enlarged axillary glands make the diagnosis from scirrhus impossible without exploratory incision. Nay, even this may mislead. On Aug. 28th, 1894, I saw a spare, healthy-looking woman aged twenty-seven years, a patient of Mr. Hugh Webb of Parson's-green, who was suffering from a tumour of the left breast. She had never been pregnant. She had noticed the occurrence and gradual enlargement of the tumour for about four months. The nipple was deeply retracted and beneath it, incorporated with the breast tissue, was a hard mass, feeling in all respects like a mass of cancer. The axillary glands were not affected. The family history was good. There had never been discharge from the nipple. An exploratory incision was made into the mass and some pus welled up, but the tissue was so dense and bore so exact a resemblance to cancer that it was thought wise to remove the whole breast. The abscess was the size of a small walnut, situated deeply beneath the nipple, and surrounded by hard indurated tissue to the extent of half an inch. Dr. Rolleston kindly examined this tissue with the microscope, and I append his report: "Groups of atrophied and compressed mammary tubes enclosed in well-formed old fibrous tissue ..... sections of the wall of the abscess shewed well-formed fibrous tissue with an irregular lining of small cells, among which there are some traces of hæmorrhage." It is questionable in cases like this whether removal of the breast is or is not the right course to pursue, and upon this most important point opinions may well be divided. The records of every hospital, if carefully perused, will afford instances of confusion between chronic abscess and carcinoma of the mamma, and will exemplify the truth that the precaution of adopting

[23] Jamain et Terrier: Pathologie Chirurgicale, tome iv., deuxième fascicule, p. 762.

[24] Clinical Lectures and Essays, p. 309.

an exploratory incision will alone discriminate between these affections. A series of chronic mammary abscesses simulating cancer are quoted by Reclus,[27] and the same subject is dealt with at length by Castex.[28]

I have intentionally somewhat hurried over the subject of the symptoms of mammary abscess, for they are tolerably well known, and I am anxious to dwell upon some points in connexion with the treatment of the disease which I believe to be of the highest importance. In the first place acute mammary abscess should be a preventable disorder if the medical attendant is careful as to the cleansing of the nipple and of the mouth of the child, and is aware of the importance of attention to the proper care of the nipples previously to marriage. In certain cases of mal-development of the nipples fissures or ulcer will arise and in such abscess may occur even with the best care. I propose to speak of the purely operative treatment of acute abscess of the breast, without ignoring the important accessories of weaning the child, supporting the breast, the administration of various drugs, or expression of the milk by massage and the exhausting pump. The prevention of mammary abscess by expression of milk, and the use of an exhausting bottle to the nipple, is favourably spoken of by Spencer and Beale.[29] The latter also advocates the treatment of mammary abscess by opening with a trocar and cannula, and applying the exhausting bottle to the aperture. While I am ready to admit that this treatment might be applicable to small superficial abscesses, I should hesitate to apply it to deeply-seated collections of pus with loculi in the substance of the gland. I feel quite sure that the treatment of acute mammary abscess by the method of establishing a free opening anteriorly radiating from the nipple is essentially wrong. It leaves a scar on the front of the breast and, what is of greater importance, it opens the purulent collection in a position the least suitable for drainage. As a consequence many of these cases need several operations until drainage-tubes are seen projecting through various openings and very unsightly scarring results with subsequent deformity and grave interference with the functions of the gland. In a considerable majority of the cases I have been able to collect from the records of St. George's and other hospitals several operations under anæsthetics were often needful. This clearly means inefficient drainage. I will now describe the method of treatment I have found efficacious in several cases, trusting that those who have extensive practice among parturient women will give it their careful consideration. So soon as elasticity and deep fluctuation are evident an incision is made radiating from the nipple just large enough to admit the index-finger of the operator and this is deepened until pus flows. The finger is now passed into the cavity, and in the vast majority of cases it will be found that the end of the digit may be brought fairly near the surface in a dependent position, and this is generally at the thoracic mammary junction. In this situation it may especially be noted that scars are hidden from view. Sometimes the finger passes towards the axillary margin, and occasionally the cavity is so large that a stout bent probe must be used to indicate the deepest part of the abscess. In this situation, the gland being well raised by an assistant, a free opening is to be made, large enough to well evacuate the pus, and the finger being now introduced through this the inferior opening, the operator will be surprised to find that the pus has burrowed about, and is contained in loculi bounded by fibrous septa. It is especially noteworthy that in many cases quite a narrow channel towards the nipple connects the deep abscess with the more superficial collection of pus opened anteriorly, and it will then be clearly understood how inefficient is drainage in the practice of those who are content with a small incision anteriorly in these cases. The remainder of the treatment is obvious; the cavity is well flushed out with whatever agent the operator fancies, and a full-sized tube is introduced from below. The opening made near the nipple is closed with fine horse-hair and painted with collodion. It readily unites with only a faint scar, and the free drainage prevents the possibility of the re-collection of pus and a necessity for further operation. The tube, a large one, can be left in the cavity as long as needful and is slowly shortened and withdrawn. It may seem superfluous to mention that the drainage-tube should be secured with a piece of silk, but the fact of the tube having entered an abscess cavity and having been there retained or only removed by a troublesome operation must not be lost sight of. This accident may readily happen unless special care be taken. The unsightly scar is completely hidden by the position and volume of the gland above.

The treatment of chronic abscess of the breast is a matter of greater difficulty and must ever raise differences of opinion. The importance of exploratory incision has already been raised, and I would here make a statement which may seem exaggerated, but which experience and a perusal of the literature of the subject permit me to positively advance. There is no symptom of scirrhous cancer of the breast which may not be simulated by a chronic abscess enclosed in a dense mass of inflammatory material, and unless exploratory measures are made as a matter of course grave errors of treatment will occasionally arise. The diagnosis of chronic abscess being established one of the first thoughts which should arise is as to the presence or absence of tubercle. The thin and watery nature of the pus with the presence of caseating material in the walls of the abscess is one of the best naked-eyed tests that can be applied. Many writers seem to be in favour of removing the entire breast in cases which appear to be of a tuberculous nature. With reference to this very important point in operative surgery much will depend upon the extent of the disease. In disseminated tubercle, where several abscesses or masses of caseating material are disseminated in the breast, removal of the entire organ, with possibly the axillary glands also, is undoubtedly the right treatment to adopt. With regard to non-tuberculous chronic abscesses there is again no absolute rule. When the abscess is surrounded by tolerably healthy mammary tissue and has moderately thick parietes the free use of the spoon, with scraping and flushing and drainage in a dependent position in the thoracic mammary furrow, will give good results. But if the abscess, as in one of the cases I have related, is enclosed in a dense mass of inflammatory tissue infiltrating the greater part of the breast, and especially if the patient be at the age when scirrhus is frequent, removal of the entire organ is, in my belief, the wiser course to pursue. Regarding this question there is much difference of opinion. It is always most difficult in practice to determine at the moment what is best for the patient, and the operative treatment of chronic abscess of the breast is eminently one for consideration and discussion. I can only assert my belief that breasts are removed too frequently for these affections, and that free drainage in a dependent position with erasion and flushing will negative the necessity for the more serious operation in the vast majority of cases we meet with in practice.

Cavendish-place, W.

[27] Cliniques Chirurgicales, 1888, page 417
[28] Revue de Chirurgie, 1887.
[29] THE LANCET, March 7th, 1896.

ON THE FORMATION AND STRUCTURE OF DENTAL ENAMEL.[1]

BY J. LEON WILLIAMS, D.D.S. BALTIMORE, L.D.S. R.C.S.I.

ALMOST every anatomist or histologist of note since the time of John Hunter has made some contribution to the subject of this paper. In going over the literature of the theme one is struck by the wide divergence of opinion expressed—a divergence which is as marked and emphatic to-day as it was forty or fifty years ago. Broadly speaking, all who have written on the subject may be separated into two groups or schools: those who have taught that the formation of enamel is effected by direct cell calcification and those who have claimed that the tissue is produced by a secretion—by the calcification of a cell-product. Between 1850 and 1860 Professor Carpenter was maintaining the former position, and during the same time the late Professor Huxley wrote several papers antagonising this view, and claiming that enamel could not be produced by any conversion of a cellular structure. Curiously enough, his main contention was correct, although founded upon mistaken premisses. In 1848 the late Sir John Tomes delivered a course of lectures in which he taught that enamel-formation is the result of the calcification of the enamel-forming cells. His son, Mr. Charles Tomes, in the last

[1] An abstract of a paper read before the Royal Society, Dec. 12th, 1895.

edition of his work on Dental Anatomy, published in 1894, still holds to this opinion, and these views are also shared by Waldeyer, Wedl, and many others. On the other side, Professor Schäfer in England, Professor Spee in Germany, and Dr. Andrews and Dr. Sudduth in America have maintained that the enamel-cells or ameloblasts are not directly calcified, but that they are the active agents in producing the material from which enamel is formed.

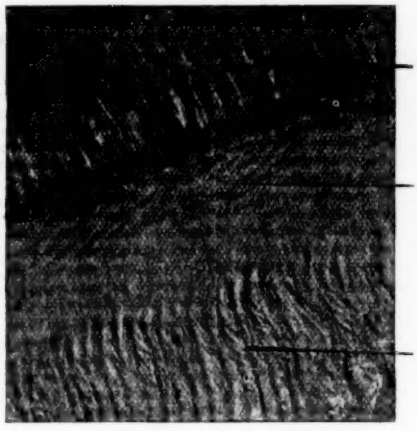
It is not my intention to present a summary of the history of the literature of this subject, and I have mentioned the foregoing names merely to show that the most eminent teachers have held, and still hold, widely different views. This difference, I believe, has largely grown out of relying too closely on one or on a few particular methods of working. I have seen many illustrations of the possibility of drawing contradictory conclusions from appearances presented by different methods of treating tissues, each of these conclusions very probably representing a half truth. Another reason may also be found in the very great difficulties attending the preparation of thin sections of developing teeth with all of the tissues in their normal relations. In deciding, therefore, to reinvestigate the whole field of the development of the teeth I determined at the outset to adopt a large number of methods of working, in the hope that by comparing the results of widely differing treatment I might unravel some of the tangles in which the subject has always been involved. I selected for the commencement of my work embryos of the cat, dog, sheep, cow, hog, and monkey, as well as human embryos of all stages of development. The rodents were also represented by mice, rats, and guinea-pigs. Some of the material was cut while fresh and some immediately after fixing by freezing processes. Other material was fixed and hardened by a great variety of processes and embedded in balsam by the Weil process or decalcified by different acids and embedded in paraffin and celloidin. More than thirty different stains and combinations of stains have been tried, and sections have been mounted in balsam, Farrant's medium, glycerol, sulpho-carbolate of zinc in glycerol (my favourite medium for purposes of study), and other preservatives. As there is but little difference of opinion concerning those earlier stages of tooth development which precede the commencement of the formation of dentine and enamel we need give no further attention to this period than is necessary for an introduction to the subject proper. All students of dental histology are now aware that the teeth are developed from two distinct tissues. The so-called enamel organ is a product of the oral epithelium, while the dentinal germ or papilla is formed in the submucous or dermal tissues, the former being the first to appear.

The first sections cut for these special studies were from the jaw of an embryo lamb at a period just after the commencement of enamel formation. The material was fixed in a saturated aqueous solution of corrosive sublimate, partially decalcified in a weak solution of chromic and nitric acids, and embedded in paraffin. Sections were stained with a modification of the Ehrlich-Biondi fluid. The appearances were different from anything I had before seen. There was no trace of a prismatic character in the partially decalcified enamel, but instead a faint appearance of fibres running parallel with the inner ends of the ameloblasts, with small globular masses irregularly distributed among them.

FIBROUS CHARACTER OF ENAMEL.

With the suggestions which this specimen gave me I prepared some extremely thin sections from the persistently growing incisor of the rat. The enamel rods in the enamel of the rat, as is well known to those who have studied the subject, terminate a little below the surface, leaving on the outside a thin layer of clear and apparently structureless enamel. A partial decalcification of this layer showed a stroma composed of two sets of fibres running in nearly opposite directions, neither direction corresponding with the long axis of the ameloblasts. One set of fibres passes in a somewhat more oblique course than the other and becomes confluent with the ends of the enamel prisms. The other set of fibres sweeps downward on a circular course, crossing the more oblique-running fibres and the enamel prisms nearly at right angles. Sometimes both sets of fibres join and twisting about each other in a rope-like design pass along the course of the enamel prisms (Fig. 1). It is probable that the arrangement of fibres is fairly constant in teeth of the same animals, although differing widely in teeth of different animals; but it is only by cutting sections in a great variety of directions that one at last gets a true picture of the complex arrangement of fibres and rods. Enamel from the teeth of rats and mice shows a more marked fibrous character than any other that I have examined, and the most striking feature of arrangement of the fibre is the interlacing or weaving together of those running in

FIG. 1.



Forming enamel from incisor of rat. × 800. A, Enamel cells. B, Outer fibrous layer of enamel. C, Enamel rods showing twisted fibres.

different directions, like warp and woof in a web. This is very plainly shown in Fig. 2, where the torn edge of the enamel bears a striking resemblance to the effect produced by tearing a woven fabric of any sort.

STRUCTURELESS BASEMENT MEMBRANE OR MEMBRANA PRÆMAFORMATIVA.

By means of selective stains I have been able to demonstrate the existence of a membrane-like structure lying between the ameloblasts and the forming enamel and also between the ameloblasts and the stratum intermedium. It is uncertain whether this structure is identical with the membrana præmaformativa of Raschow, Huxley, and others. Its existence has been disputed by several of the more recent writers upon this subject, but it is plainly shown in Figs. 3, 4, 5, 6, and 7. I suggest that the structure lying between the ameloblasts and the stratum intermedium be called the *outer ameloblastic membrane*, while that which separates the enamel cells from the forming enamel may be known as the *inner ameloblastic membrane*.

THE CELLS OF THE STRATUM INTERMEDIUM.

It has for many years seemed clear to me that the enamel organ, and more especially the cells of the stratum intermedium, should be classed among the true secreting tissues. I am not able to understand how so many good observers have failed to see the intricate plexus of bloodvessels, which is very early developed in this layer of cells. Wedl, Magitot and Legros, Suddoth, and others say that they have uniformly failed to detect a blood-supply within any part of the enamel organ proper. If we examine the evolution of this tissue in the enamel organ of the mouse or the rat its place among glandular structures at once becomes evident. All appearance of round, polygonal, or oblong cells, as usually seen in the stratum intermedium, has entirely disappeared, and in their place we have a highly differentiated secreting tissue. The ameloblasts are surmounted by epithelial papillæ, around and between which is a free distribution of capillary loops. The ameloblasts are seen to be in intimate relation with the papillæ, each ameloblast seeming to have a root-like process which extends into and is lost in the substance of the papilla to which it belongs. The diameter of each papilla is equal to about that of five or six ameloblasts, and each papilla may therefore be said to supply from twenty to twenty-five ameloblasts. Bloodvessels are seen, in both transverse and longitudinal section, everywhere

about the papillæ, and we may often observe branches descending to supply the loops which pass round the ends of the papillæ lying next the ameloblasts (Fig. 2).

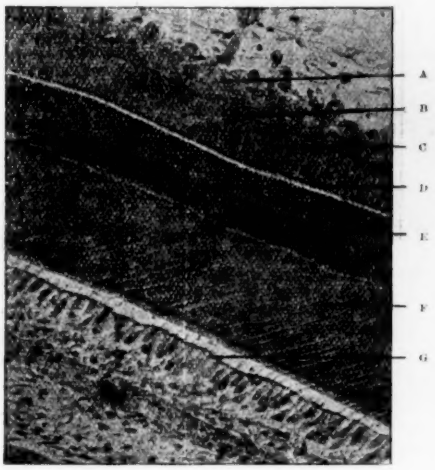
At the commencement of enamel-formation in the teeth of

FIG. 2.

Forming enamel of rat. × 400. A, Secreting papillæ of enamel organ. B, Enamel cells. C, Torn fibrous edge of enamel.

the mouse there is but little indication of a special secretory organ, as may be seen by referring to Fig. 4. We see here that the outer ameloblastic membrane is not structureless, but is apparently composed of very fine fibres.

FIG. 3.

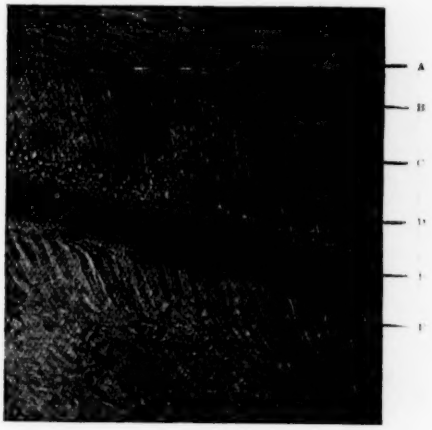


From longitudinal section of developing tooth of lamb. × 150. A, Secreting cells of stratum intermedium. B, Outer ameloblastic membrane. C, Ameloblasts or enamel cells. D, Inner ameloblastic membrane. E, Enamel. F, Dentine. G, Odontoblasts.

METHOD OF FORMATION OF ENAMEL.

Several observers of distinction, notably Dr. R. R. Andrews and Professor Spee, have described the development of enamel as a process in which the tissue is formed by the deposit of droplets or spherules of calcoglobulin. This view is undoubtedly correct, but, as stated by the writers mentioned, it does not include all the phenomena that may be observed. The ultimate structure of completely formed enamel shows that it is built up by the deposit of bodies

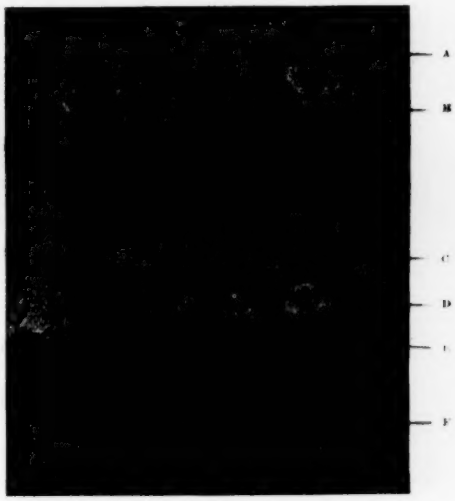
FIG. 4.



Section of developing incisor of mouse. × 400. A, Cells of stratum intermedium from which secreting papillæ are developed. B, Outer ameloblastic membrane. C, Ameloblasts. D, Formation of enamel by deposit of globular bodies from enamel cells. E, Dentine. F, Odontoblasts.

which are of very nearly uniform size. There is, as we shall see, no uniformity in the size of these masses of calcoglobulin, neither is there anything in their structure which corresponds with that of formed enamel; in fact, under the finest lenses that are made they show as highly refractive

FIG. 5.

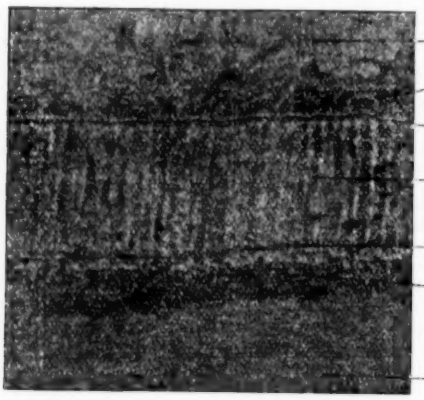


Formation of masses of calcoglobulin in enamel organ of lamb's tooth. × 800. A, Stratum intermedium. B, Outer ameloblastic membrane. C, Inner ameloblastic membrane. D, Calcoglobulin masses. E, Enamel globules from which enamel rods are formed. F, Dentine.

masses without definite structure. Although they are usually more numerous at the inner ends of the ameloblasts, next to the forming enamel, they may be seen throughout the entire

length of these cells, and I have often seen them lying close up to the membrane which separates the ameloblasts from the stratum intermedium. Occasionally I have espied them when they seemed to be actually in, or emerging from this membrane. Such appearances are shown in Fig. 5. It is possible, and I think highly probable, that this substance, although appearing in the ameloblasts, is really formed in the more specifically secreting cells of this stratum inter-

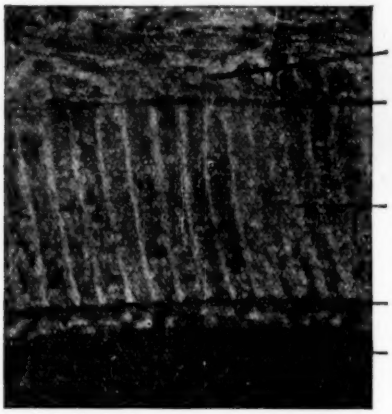
FIG. 6.



Section of developing tooth of human embryo. × 600. A, Reticulum of enamel organ. B, Stratum intermedium. C, Outer ameloblastic membrane. D, Ameloblasts. E, Inner ameloblastic membrane. F, Formation of enamel rods by successive deposit of enamel globules. G, Dentine.

medium. These masses probably consist of calcoglobulin, an albumin-like substance holding calcific material in solution. Its function, I believe, is not the building up of the enamel rods as has heretofore been supposed, but the formation of the interprismatic or cement substance which binds the enamel rods together. It is clearly shown in Fig. 6 that the

FIG. 7.



Section of developing tooth of dog. × 1000. A, Stratum intermedium. B, Outer ameloblastic membrane. C, Ameloblasts showing small masses of calcoglobulin. D, Inner ameloblastic membrane. E, Enamel.

enamel rods are formed by the superposition or continuous deposition of bodies which are spherical when they leave the enamel cells, but by compression or chemical action are more or less changed into a disc-like shape as they take their place in the building of the enamel rods. Thus for the first time we have a clear explanation of the varicose appearance of the rods or prisms in completely formed enamel. Each varicosity of the rods represents one of these globules or disc-like bodies. In the inner portion of enamel next to the dentine the enamel globules usually melt together so completely that their individual form is lost, but as we approach the outer surface of the enamel the rods are clearly seen to be composed of globular or flattened bodies, not completely united, but still connected by calcified plasmic strings. These plasmic strings, of which there are many to each enamel rod, are often seen under a power of from 800 to 1000 diameters to be made up of granules, and these granules, so far as our present powers of observation are concerned, constitute the ultimate structure of enamel.

THE CROSS STRIÆ AND RETZIUS BANDS.

My observations on these points have led me to totally different conclusions from those reached by Professor von Ebner of Vienna. Professor von Ebner regards the striæ of the enamel rods as an artificial appearance produced by the action of acids, and the Retzius bands as due to ground-off or artificial prism ends, and also to imprisoned air or gas contained in minute tubes or canals.

I have clearly demonstrated that the cross striæ are due to the varicose enlargements of the enamel rods and that these varicosities are produced by the successive deposit of globular masses from the enamel cells. The deposit of these bodies is simultaneous over the entire surface of the forming enamel, hence the regularity of the lines of striation and increment. I have further shown that the Retzius bands cannot be due to air or gas in minute canals because there are no such canals in normal human enamel. Neither are these bands due to the ground-off ends of enamel rods, as may be clearly seen from Fig. 8, where the rods are seen to

FIG. 8.

Human enamel. × 1000. A, B, Bands of Retzius. C, Enamel rod passing through bands without break of continuity.

pass through several bands without break in their continuity. The Retzius bands are caused by pigmentary matter in the granules which constitute the ultimate structure of enamel. Completely formed normal human enamel contains no living matter in the sense in which this term is generally understood. There are consequently no nutritive changes in enamel after it is once formed.

George-street, W.

THE FRENCH HOSPITAL.—The twenty-eighth annual dinner in aid of the funds of the French Hospital and Dispensary in London was held at the Hôtel Métropole on April 25th. The chair was taken by the French Chargé d'Affaires (M. Léon Geoffray), who was supported by, among others, the Lord Mayor, the Swiss Minister, the Italian Ambassador, Sir William MacCormac, Dr. L. Vintras, Dr. J. Keser, and Mr. E. Rüffer (honorary secretary). Subscriptions and donations amounting to nearly £2500 were announced.

REMARKS ON A CASE OF SPLENECTOMY, WITH OBSERVATIONS ON THE CONDITION OF THE BLOOD BEFORE AND AFTER OPERATION.

BY C. J. BOND, F.R.C.S. ENG.,
HONORARY SURGEON TO THE LEICESTER INFIRMARY.

WHILE our knowledge of the function of the spleen as far as regards its relation to the corpuscular elements of the blood is somewhat fragmentary, still evidence has accumulated latterly[1] which points strongly to the very important share the spleen takes in the breaking up of the red corpuscles. It is in order to emphasise this point that I am induced to publish the following remarks.

It seems pretty clear from the experience of several observers, Gibson and others, that the effect of removal of the spleen in dogs is to produce at first a diminution in the number of red corpuscles and an increase, both relative and absolute, in the number of white corpuscles; this condition reaches its maximum in a few weeks, and then, owing probably to the fact that other organs concerned in blood metabolism, such as the marrow and lymph glands, take on compensatory action, the normal proportion of red to white corpuscles is re-established in a few months. In the case of man, although numerous cases of splenectomy have been recorded, there are very few in which the blood condition both before and after operation has been accurately noted. In Crédé's case the immediate effect of removal was an increase in leucocytes, but the blood reached its normal state later. In this case, however, the spleen was cystic, and it is very important to bear in mind that in experiments on animals it is a physiologically healthy organ which is removed. So, too, in those cases in man in which the spleen has been removed for cystic disease, the organ is not probably in that active pathological condition as regards blood metabolism, that it is in other cases of splenic hypertrophy and splenic lymphadenoma, consequently the effect on the blood of removal of the organ is likely to be very different in the two classes of cases. With these few preliminary observations I will shortly narrate the notes of the case and then offer one or two remarks on the effect of removal of the spleen on the blood.

A married woman aged thirty-five years, having two children, the youngest aged six years, was strong and healthy until two years ago, when, without any apparent cause, her health began gradually to deteriorate and she first noticed a swelling in the left hypochondrium. During these two years she has gradually lost strength and flesh and become more anæmic, and has suffered, too, from occasional attacks of vomiting, until during the last fortnight the vomiting has been excessive and the asthenia very great. There was a large movable mass in the left side, having all the characters of an enlarged spleen; it was very movable, so that the sharp notched anterior margin could be turned right over and made to lie in the left flank, and it was, I think, probable that this extreme mobility, by causing stretching of the gastro-splenic omentum, may have been the chief cause of the vomiting. The temperature was normal, the urine healthy but somewhat deeply pigmented, with occasional deposit of urates. After a few twenty-grain doses of calcium chloride on the three previous days the spleen was removed on March 27th, 1895, four days later. A median incision was made and the enlarged organ delivered lower end first; owing to its extreme mobility and the absence of adhesions this was not difficult. The pedicle was wide and contained some inches of the tail of the pancreas, which easily came outside the abdomen. The splenic artery, enormously enlarged, was first ligatured separately and the rest of the splenic mesentery was ligatured in several portions and the organ removed. The abdominal wound showed a tendency to bleed unduly and the blood appeared brighter and more arterial than usual; after swabbing with hot hazeline it was sutured and no further hæmorrhage occurred. Recovery from the surgical point of view—that is, as far as the wound was concerned—was uneventful. At the end of the first week, after a week's subnormal temperature, the patient complained of considerable pain in the region of the liver and the temperature ran up to 101° F.; it came down, however, in a few days, but ran up again to 103° a fortnight later, and for three days continued of remittent type, with morning remissions, again becoming normal on the third day. I have noticed these irregular rises of temperature, having no surgical cause, in two other cases of splenectomy, and, indeed, in patients who are suffering from splenic enlargement with or without leucocythæmia, the temperature line, even when normal or subnormal, shows the evening rise and morning remission; it may, I think, probably depend on the blood condition and requires further investigation.

The effect of the removal of the organ on the blood may next be considered. The blood was examined three days before operation; at that time the red corpuscles numbered only 3,000,000 per c.m. and the white about 1 to 250 red, and the hæmoglobin was only 50 per cent. of the normal quantity. At that time the patient was on a generous diet and small doses of arsenic and iron. Seven days after removal, the patient having been on the very low diet usual for the first few days after abdominal section, the red corpuscles numbered 6,000,000 per c.m. and the white 1 to 250 red, and the hæmoglobin had risen to 80 per cent. The blood was now examined at intervals of about a week; the excessive increase of red corpuscles was not maintained, but fell on April 11th to 5,800,000, on April 21st to 5,200,300, but rose again on April 28th (which date coincided with the febrile attack) to 6,000,000, but fell again, till on May 28th it was 4,120,000. The white corpuscles showed a very slight progressive increase and the hæmoglobin fell after the first week from 80 to 70 per cent. and remained at about 65 per cent. of the normal. The marked change in the patient's appearance after the first week, from pallor to a florid complexion was very striking, and when last seen on June 8th the appearance was maintained; she expressed herself as feeling well, though still weak; the urine was now and had been pale since the operation. The spleen after removal and when drained of blood weighed 1 lb., was uniformly enlarged, of a dark-blue colour, and on microscopical examination showed the appearance of simple hypertrophy—that is, enormous increase of the pulp tissue or reticular structure crowded with lymphocytes. Besides the changes in the corpuscular elements in the blood mentioned above, there were other changes. A specimen of blood both before and after operation when examined immediately after withdrawal showed a considerable number of masses of granular protoplasm like islands in the plasma. On staining thin films of blood coagulated by heat immediately on withdrawal, with Grubler's eosin hæmatoxyline glycerine stain, these irregular protoplasmic masses stained deeply with hæmatoxyline contrasting strongly with the eosin coloured red corpuscles. As to the nature of these bodies, knowing that other observers have described the appearance of granular bodies in the blood, which have been really a post-mortem change and due to aggregation of blood platelets and other causes, it seemed likely that such might be their origin in this case. The fact that they were present in a film of blood heated on a cover glass immediately on withdrawal shows that the change must occur very rapidly. In order, however, to decide this I first examined the blood by pricking the finger through a drop of Hayem's fluid, and allowing the blood to run directly from the vessels into that fluid as practised by Hayem, but I found that these granular masses were still present as such in the liquid. I found, however, when using osmic acid (2 per cent.) instead of Hayem's fluid, that they were not present, as such, in the blood as it left the vessels, but rather an increase of small disc-like granular bodies exactly resembling the figures of Hayem's blood platelets, fixed, no doubt, by the osmic acid in the form in which they circulate in the vessels. An examination of the blood of other patients suffering from other diseases was now undertaken, and while granular masses were occasionally found in many of the diseases accompanied with high temperature especially of the infective type, in which there was increased activity of the blood and lymph organs, I found them especially abundant in a bad case of phthisis in the last stage with a very marked hectic temperature with an evening rise of 103·5°. Here, too, they were absent in the blood received into the osmic acid solution, and instead was found a marked increase in the blood platelets as compared with normal blood. The same masses were found with the same antecedent increase in blood-plates in a case of splenic leucocythæmia,

[1] See papers by Dr. Hunter and Dr. Auld on Hæmatogenous Jaundice. Brit. Med. Jour., Dec. 3rd, 1892, and Jan. 18th, 1896.

but in a very much less marked degree, and in this case the very numerous leucocytes were of the large, faintly granular kind with dividing nuclei, and the small, deeply granular lymphocytes, whereas in the case of splenectomy the few leucocytes were like those found in the normal blood. It is also interesting to note that the same granular masses were found to a very excessive extent in a patient in whom the spleen had been removed by Mr. Marriott four months previously. The organ is now in the museum of the Royal College of Surgeons of England, and on microscopic examination showed the same character of hypertrophy together with numerous collections of large multinucleated cells like giant cells.[2] In this case there was no leucocythæmia and not much anæmia, but there was a very marked tendency to hæmorrhage; and, further, I found that these granular masses were practically absent from the blood of a patient when examined fifteen months after removal of the spleen for cystic disease also by Mr. Marriott.

Such then are the facts as far as ascertained. Before drawing any inferences from these as to any function the spleen may have in blood metabolism it may be well to call to mind for a moment the various views held as to the physiology of the normal spleen. It is supposed that the spleen in man takes some share in the retrogressive changes in the red corpuscles, in some way tending to dissociate the hæmoglobin from the effete corpuscle, and thus prepare the way for the further change—the conversion of hæmoglobin into bilirubin which occurs in the liver (Foster). It is held that the spleen, as a part of the lymph gland system, produces leucocytes which are thus added to the blood. It is further held that the spleen produces red corpuscles either by the deposition of hæmoglobin in the large cells of the spleen pulp, or, as held by Virchow, that it converts the leucocytes into the hæmoglobin-holding or red corpuscles during their slow passage through the pulp tissue, and that the essential factor in the disease splenic leucocythæmia is a failure to bring about the conversion of white into red corpuscles. Among these various suppositions it seems clear that in the evidence derived from pathological investigation, as in that derived from experiments on animals, it is very difficult to isolate, as it were, the spleen from the rest of the organs, lymph glands, bone marrow, &c., concerned in blood metabolism, and to apportion the exact amount and kind of function to the spleen which it really possesses. The fact that in the case of splenectomy after removal of a hypertrophied organ, the red corpuscles doubled in number in one week after operation, other things remaining the same, is pretty clear evidence, I think, that the spleen in this case was previously to removal actually engaged in the destruction of the red corpuscles.

The next point is the presence in the blood of the granular masses which are probably not present in the circulating blood, which have for their antecedents an increased number of blood platelets. The masses are so large that it is somewhat difficult to understand how they can be formed by the aggregation of numbers of blood-plates only, and it looks as if each aggregation of platelets was a focus from which at the moment of withdrawal of the blood some effect was produced on the plasma around, causing it to become granular and to take the hæmotoxylin stain. The fact that these masses, with their antecedent increase in number of platelets, gradually increase after splenectomy, and were also present in a marked degree in one patient four months after removal of the spleen, is clear proof that the blood-plates are not formed entirely or even chiefly in the spleen. The further fact that this increase of blood-plates is present together with a marked tendency to hæmorrhage is a matter of peculiarity and of interest, because it has been strongly held by Hayem and Osler, and others that the blood-plates are one of the determining factors in causing coagulation of the blood.

Finally, it is, I think, becoming more evident that these different cases of splenic diseases, varying as they do in their clinical character, in the degree of anæmia, and in the presence or absence of leucocythæmia, each have a different pathology; and that in many cases the disease is a general one affecting the whole system of blood-forming organs, while in others the spleen itself is the organ alone involved, and it is, of course, in this latter class that the operation of splenectomy holds out the best prospect of success.

Leicester.

[2] There is evidence pointing to this being a tuberculous spleen.

A RECORD OF

THE INFECTIOUS DISEASES OCCURRING AMONGST 400 ADOLESCENTS DURING A PERIOD OF TWENTY-FIVE YEARS.

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THE following record of the infectious diseases occurring amongst a large number of adolescents during a period of twenty-five years will be of interest to those who have the welfare of the young at heart during the period of education. There can be no question of the fact that the amount of illness amongst the young is a sure index of the appropriateness or otherwise of their surroundings. And, further, a trivial infectious illness assumes importance in schools in proportion to the number of persons it obtains opportunity of infecting. As a class zymotic diseases are fostered where organic matters, inclusive of animal exhalations, are undergoing decomposition—in fact, these conditions form a fertile soil in which disease bacteria as well as putrefactive bacteria can flourish. They vary in amount and in frequency to an enormous extent in different schools. In some they appear to be regarded as necessary evils and no attempt is made to diminish their number; in others they are encouraged owing to a damp situation causing an absence of vigorous health; in others by reason of facilities for infection, owing to the schools being situated in towns; in others, again, in consequence of children being crowded together in barracks by hundreds instead of in houses by tens; and in others, on account of their faulty sanitary arrangements or by reason of an impure water-supply. When set going in a school illness of this class is multiplied by imperfect medical arrangements, often of the most primitive description, so that infected children are not immediately and completely isolated from the healthy—in fact, in a large proportion of instances pupils suffering from many of the zymotic diseases are allowed to remain and be treated in the boarding houses with those who are not infected. Schools will never be exempt from infectious illnesses until we are able to prevent them by protective inoculations, but they should be under some effective control. This can be achieved by preventing overcrowding, remedying faulty drains, removing refuse heaps, providing a good water-supply, and sufficient and wholesome food. I venture to place this record before the profession, for it indicates what can be done where a school is healthily situated, where sanitary necessities are not ignored, where the provision for sickness somewhat approaches an ideal standard, and where unceasing care is bestowed upon the minutest details in the medical arrangements. At the present time no case of accident or sickness of any kind is treated in boarding-houses, but in every case of unfitness for schoolwork which requires detention for more than a few hours the patient is removed for treatment to the sanatorium, where the proportion of sick beds should be 10 per cent. This must be the minimum number, and to render them sufficient the greatest pains must be taken to isolate the first cases of zymotic diseases and to quarantine those that are suspicious or have even been in close contact with the first case, for without this caution they are totally inadequate and 15 per cent. is imperative. Unless this care is exercised large schools must have their cases of infectious illness by the hundred. It must be borne in mind that, owing to the increased solicitude expended upon children in the nursery in the prevention of illness, a far larger proportion enter upon school life without having passed through the ordinary infectious illnesses which were formerly considered incidental to early childhood, to the infinite gain of the children. For, consider for one moment the mortality of whooping-cough and measles in children under two years of age, while at the school age it is practically *nil*; and in the case of scarlet fever it is 4 per cent. at the school age and 26 per cent. in children under two years of age. The following tables are sufficiently explicit to speak for themselves. I append a few notes of comment upon some points connected with them.

Influenza.—Before the influenza reached Rugby in 1890 it was very prevalent and fatal in various parts of the country, and the headmaster called upon me to discuss the question

of reassembling the school in January. Some schools had already given out that they would not assemble. I was unable to advise a resort to this plan and we met as usual. I had never seen a case of influenza, but from watching the published accounts it was quite evident that it mainly spread from patient to patient, as was conspicuous in the House of Commons. I therefore resolved to treat it as one of the ordinary zymotic diseases and isolated every case as it arose, however slight—quarantining on mere suspicion also—for a minimum period of ten days and then disinfected thoroughly before permitting a return to school. The result was that only 16·25 per cent. fell with it in that year, while another school with which I am acquainted and which did not follow this plan had 96 per cent. fall. In 1893, when we had the largest number, by still pursuing this method only 29·5 per cent. were affected. In the six years of the epidemic, with a total number of cases of 431, there was only one death, which arose from cerebro-spinal meningitis.

Epidemic roseola.—This disease is usually, most unfortunately, called "German measles" and is so frequently confused with English measles that it entails endless trouble and anxiety. It spreads largely owing to ill-defined cases. For instance, some cases present merely *pink eyes* and no rash, and are consequently frequently not isolated, so that while they infect schoolfellows they are themselves protected from a subsequent attack. Others have only the subcutaneous lymphatic glands enlarged in the groin, in the armpit, and in the side of the neck. They have no eruption and yet they spread it in the same way.

Mumps.—It is still insufficiently recognised that the orchitis of mumps, as I pointed out in THE LANCET of Oct. 29th, 1881, when it *follows* parotitis (instead of taking its place, as it occasionally does) invariably arises on the eighth day of mumps and never occurs if the patient is kept in bed over the eight days.

Ophthalmia.—Previously to 1875 these cases were not isolated, but were treated in the boarding-houses, so that I have no record of them; since then every case has been isolated as carefully and as strictly as if it were scarlet fever. It is evidently a germ disease which occurs in epidemic form from time to time, obeying the same laws as all classes of zymotic diseases, and having, where hygienic conditions are as they should be, its period of quiescence. In 1893 it was rife all over the country and I was consulted concerning it by several schools. Like all the zymotic diseases of which I am speaking it is mainly a disease of the young and, as a rule, leaves the adult severely alone. For the growth of all kinds of bacteria two things are essential—the germs themselves and a suitable soil for their germination. Without the latter, while the diseases they occasion may occur, they fail to develop luxuriantly and so are comparatively innocuous and do not spread, but only affect some peculiarly susceptible individuals. Woe betide, however, the assemblage of the young where unsanitary conditions are in force. For instance, the advent of cholera in a clean neighbourhood causes little anxiety, while where filthy conditions are rampant it decimates the population. Typhus fever, so prevalent in former years in our gaols as to receive the name of "gaol fever," saved the judges much trouble (where it did not kill them) by otherwise disposing of the prisoners. The germs found the most suitable soil in the appalling state of our prisons, whereas now, owing to their improved hygienic conditions, the germs have not a chance to grow and the disease is practically unknown in them. The germs of ophthalmia have found a similarly suitable soil in the State schools, as has been recently revealed by the commission of inquiry into the condition of the metropolitan pauper schools, where the children are apparently as grossly neglected in all sanitary precautions as were our prisoners in the sixteenth century. Its prevalence is the surest test of unsanitary conditions where the young are concerned, especially the want of soap and water and fresh air. Wherever these are absent in relation to the young there ophthalmia and impetigo are sure to be found.

The need of fresh air for children is mostly felt in the dormitories, where nine or ten hours are continuously spent

TABLE I., *showing the Seasons of the Year in which Infectious Illness has occurred amongst 400 Adolescents during a Period of Twenty-five Years from Jan. 1st, 1871, to Dec. 31st, 1895.*

Name of zymotic disease.	Number of cases occurring during the month of												Total.
	*January.	February.	March.	*April.	May.	June.	July.	*August.	*September.	October.	November.	December.	
Influenza ...	35	84	97	2	15	60	104	—	—	10	15	9	431
Measles ...	4	119	10	1	65	73	96	—	—	—	—	—	368
Epidemic roseola	—	—	98	26	30	76	33	—	1	1	—	2	275
Mumps ...	4	29	67	10	7	13	37	—	—	3	15	11	196
Ophthalmia	—	17	25	—	29	42	21	—	2	20	12	10	179
Chicken-pox	1	7	19	1	4	3	—	—	—	8	27	22	92
Scarlet fever	—	10	9	5	6	8	11	—	1	—	9	12	71
Whooping-cough	—	5	3	—	8	8	8	—	—	—	—	—	32
Ringworm ...	—	5	3	—	2	4	—	—	3	1	2	2	22
Typhoid fever	—	1	—	—	—	—	—	—	—	1	1	1	4
Diphtheria ...	—	—	—	—	1	1	—	—	1	—	—	—	3
Erysipelas of head and face	—	—	—	1	—	—	—	—	—	—	—	—	1
Small-pox ...	—	1	—	—	—	—	—	—	—	—	—	—	1
Totals ...	44	286	332	46	167	288	310	—	8	44	81	69	1675

* Vacations.

TABLE II., *showing Year by Year the Attacks of Infectious Illnesses occurring amongst 400 Adolescents during the Twenty-five Years from Jan. 1st, 1871, to Dec. 31st, 1895.*

Name of zymotic disease.	Number of Cases occurring during the year.																								Total.
	1871.	1872.	1873.	1874.	1875.	1876.	1877.	1878.	1879.	1880.	1881.	1882.	1883.	1884.	1885.	1886.	1887.	1888.	1889.	1890.	1891.	1892.	1893.	1894.	1895.	
Influenza	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	65	89	73	113	68	12	431
Measles	—	30	—	26	5	—	6	—	—	—	—	71	—	45	—	—	—	69	—	12	47	6	—	1	50	368
Epidemic roseola	1	—	—	7	—	2	59	23	—	14	—	7	30	1	—	—	65	—	—	—	—	54	9	—	—	275
Mumps	—	26	21	—	30	—	2	11	—	8	—	1	—	11	3	2	—	24	—	—	2	4	61	—	—	196
Ophthalmia	—	—	—	—	4	2	1	2	2	3	1	—	21	9	3	2	10	4	2	1	25	21	31	17	18	179
Chicken-pox	2	—	—	6	1	—	—	5	—	10	1	1	5	2	—	4	—	3	11	18	—	3	3	4	13	92
Scarlet fever	—	1	—	10	2	—	6	—	—	6	17	—	—	5	3	1	1	—	7	—	—	—	—	2	10	71
Whooping-cough	—	—	3	—	—	—	—	1	—	—	—	1	—	—	10	—	—	—	—	—	—	3	—	14	—	32
Ringworm	—	1	—	—	—	1	—	1	4	2	1	1	—	—	—	2	1	—	1	1	1	1	—	3	1	22
Typhoid fever	1	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	1	—	1	—	—	—	—	—	—	4
Diphtheria	—	—	—	—	—	—	—	—	—	—	—	—	2	1	—	—	—	—	—	—	—	—	—	—	—	3
Erysipelas of head and face	—	—	—	—	—	—	—	—	—	—	—	1	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Small-pox	1	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	1
Totals	5	58	24	49	42	6	74	46	6	43	20	83	58	74	19	11	78	100	22	97	164	165	212	109	110	1675

in a more or less close atmosphere, varying according to the cubic space and ventilation provided. Some time since I had occasion to visit a school bedroom where five children were sleeping in the cubic space appropriate for three. The stench was so horrible that I retired as expeditiously and as gracefully as I could. I knew that by-and-by I should see the effects of this, and sure as fate one of the occupants developed ophthalmia, with subsequently granular lids, which took me thirty-three days to cure, and this with a keen insight into the cause, with an unlimited supply of air indoors, with six hours a day out of doors, with an unlimited and unquestioned food-supply, and with an able and willing nurse at my command with ample time at her disposal. Yet all the circumstances of life were as healthy as could be wished, with the exception of the deficient ration of air. If this difficulty arises where such facilities are possible it is no wonder that it is incurable and that children so frequently become blind where they are overcrowded or where there are insufficient attendants to carry out the nursing. It is hopeless to attempt to prevent the spread of ophthalmia in any school until it is fully recognised that it is as loathsome to retake our gaseous emanations into the lungs as it would be to insert our liquid and solid excretions into the stomach. Yet these pauper children in State schools rebreathe over and over again their prebreathed air, with the natural result. When they receive their due sanitarily ophthalmia, except seasonal sporadic cases, will become as extinct in these schools as gaol fever is in prisons, for it arises from similar faults and is a disease of the overcrowding of children as typhus fever is of adults.

TABLE III., *showing the Average Number of Cases of Infectious Illness occurring amongst 400 Adolescents during a Period of Twenty-five Years from Jan. 1st, 1871, to Dec. 31st, 1895.*

Name of zymotic disease.	Total number of cases in 25 years.	Average number of cases per annum.	Per cent. per annum.
Influenza	431	17·24	4·25
Measles	368	14·72	3·68
Epidemic roseola	275	11·00	2·75
Mumps	196	7·84	1·96
Ophthalmia	179	7·16	1·79
Chicken-pox	92	3·68	0·92
Scarlet fever	71	2·84	0·72
Whooping-cough	32	1·28	0·32
Ringworm	22	0·88	0·22
Typhoid fever	4	0·16	0·04
Diphtheria	3	0·12	0·03
Erysipelas of head and face	1	0·04	0·01
Small-pox	1	0·04	0·01
Total number of all cases of infectious illness among 400 adolescents during 25 years	1675	67·00	16·70

Moreover, there is not a month in the year in which the germs of ophthalmia are not on the war-path. The only months where none are recorded in Table I. are those of the vacations. It will be observed that the largest number of cases has occurred in June, and also, as shown in Table II., the largest number occurred in one of the sunniest years, 1893, though in another sunny year, 1887, there were comparatively few. I can only account for this by those cases which arise from exposure to strong sunlight at cricket in caps which afford no shade for the eyes. The plan seems to me exceedingly injudicious not only from the eye but from the cricket point of view, for strong sunlight in the unshaded eyes causes the lids to be half closed to shield them from the glare, vision is not so acute, and from time to time it prevents cricket altogether through causing granular lids. It may be said that these, possibly sun cases, are not similar to those I have been discussing. This may be true. I do not profess to have arrived at a solution of the difficulty; but I do know this, that, whatever the cause, the effect is much the same—granular lids in spite of urgent and hygienic treatment such as I have described above. There is another point about ophthalmia which I am at present unable to explain—many of the cases are accompanied by albuminuria. The gist of the whole matter is this, that notwithstanding the greatest care, the provision of hygienic surroundings, and even of 800 cubic feet for dormitories, sporadic cases of ophthalmia will arise where the young are congregated together. What happens when these essentials for health are not in force has been revealed by the commission above referred to.

Diphtheria.—It will be of interest to note that the dates of the two cases which occurred in 1883 were June 19th and September 26th.

Small-pox.—This one case occurred in the severe epidemic of 1871–72. As boys are now re-vaccinated, and have been since 1873, on entering the school it is scarcely probable that another case will have to be recorded.

Rugby.

THE VACCINATION LAWS AND THEIR AMENDMENT.

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THE principal Acts of Parliament in force relating to vaccination are (1) the Vaccination Act of 1867 and (2) the Vaccination Act of 1871. Previously to 1867 at least three Acts had been passed—one in 1840 entitled "An Act to Extend the Practice of Vaccination"—a purely optional Act; a second in 1853 making vaccination compulsory; and a third in 1858 entitled "An Act for Vesting in the Privy Council certain Powers for the Protection of the Public Health." The 1853 Act was not, however, efficiently enforced. In the 1840 Act inoculation or otherwise producing small-pox was forbidden under a penalty of one month's imprisonment. The Act of 1867 consolidated and amended all the laws relating to vaccination. This Act came into force on Jan. 1st, 1868, and although amended in certain clauses by the Act of 1871 is still called the principal Act dealing with vaccination. A recapitulation of the more important clauses in the Act is necessary to show that, although it is in itself an admirable Act, the method adopted for securing efficient vaccination has, through non-enforcement of some of the clauses, not proved so successful as was at one time anticipated. By this Act, in addition to the payments from the guardians, an allowance was to be given at a rate not exceeding 1*s.* for each child vaccinated. The fee payable for vaccination within one mile from the vaccinator's residence was not to be less than 1*s.* 6*d.*, over one and under two miles not less than 2*s.*, and over two miles not less than 3*s.* Revaccination was to be paid at the rate of two thirds of the fee payable in cases of primary vaccination. The parent was to see that his child was vaccinated within three months. Provision was also made for the inspection of the child after vaccination, for certificates of unfitness, and for insusceptibility. In this Act the certificate of successful vaccination was to be sent to the registrar and a duplicate to be given to the parent. If the vaccination were performed by a medical practitioner other than the public vaccinator the parent had to transmit the certificate to the registrar of the district. Vaccination or surgical or medical assistance incidental to vaccination by the public vaccinator was not to be considered as parochial relief, alms, or charitable allowance, and no such parent or person was to be deprived of any right or privilege or subject to any disqualification. The guardians half yearly were to revise the list of unvaccinated, and it is distinctly stated that they shall cause proceedings to be taken against persons in default. This clause has, as we well know, not been carried out by a large number of boards of guardians in England. In the report of the medical officer to the Local Government Board for 1890 the number of children not finally accounted for, including postponed cases, stated as percentage of total births, was for England and Wales 11·3, while in the county of Bedford it was 30, in Leicester 52·9, and in Northampton 43·6. In the metropolis the largest percentages were in Bethnal-green 30·6, Greenwich 32·3, and Hackney 26·6. In the various unions in England the highest percentages were in Luton (Bedford) 72·5, Falmouth 46·5, Weymouth 28·3, Gloucester 83·2, St. Albans 32·8, Tonbridge 25·3, Oldham 74·4, Barrow-on-Soar (Leicester) 67·2, Leicester 78·7, Loughborough (Leicester) 61·4, King's Lynn 40·2, Kettering 53·3,

69·6, and Keighley 80·1. To sanitarians these figures are of exceptional interest, as in these localities small-pox if once introduced tends to spread with rapidity and is a source of danger to the whole of the country. We have only to single out one which has been brought into prominence within the last few weeks—viz., Gloucester. In 1890 the percentage of unvaccinated children to births in that year was 83·2, and there is good reason for the belief that the percentage had not diminished but rather increased in the following years. Over 80 per cent., then, of the children under five years must have been unvaccinated, and we know that among these small-pox spreads with great rapidity and is exceptionally fatal. What has happened there is likely to happen in any unvaccinated or badly vaccinated community, although in the latter the age incidence may be altered.

Another clause in the 1867 Act is worthy of noting—viz., clause 28, which is to the effect that guardians may pay all expenses in working this Act, and in or about inquiries and reports as to the state of small-pox and vaccination in their union or parish, and in taking measures to prevent the spread of small-pox and to promote vaccination upon any actual or expected outbreak. Very few, if any, boards of guardians in England have taken advantage of the clause. It is generally left to the health officer to carry out these inquiries, and more especially has this been the case since the notification of small-pox has been enforced. The 1871 Act principally dealt with the appointment and duties of the vaccination officer, and also that the lists of births and of deaths of infants under twelve months were to be transmitted once at least in each month to such officer. In this Act also a clause was inserted imposing a penalty on the parent or guardian for preventing the public vaccinator from taking lymph from children vaccinated by him. These, in short, are the main provisions of the Acts in force, and after nearly thirty years most sanitarians are of opinion that a change in administration is necessary. When the 1867 Act was passed the laws relating to public health were in their infancy, and the 1875 Public Health Act, not to speak of the more extended 1891 London Act, was not dreamt of. The prevention of all other infectious diseases, small-pox included, is one of the duties of the health officer, and no one doubts that vaccination and revaccination constitute *the*—I would almost say *the only*—means of preventing small-pox. The transference of all powers in regard to vaccination from the boards of guardians to the sanitary authorities is therefore necessary. The advantages of this are obvious. It may reasonably be asked, Have the public any guarantee that these duties would be carried out any better under the sanitary authority? One thing to be said in answer to this is that every sanitary authority has an official who is, or ought to be, capable of directly advising them in all matters relating to vaccination, while under the present system the guardians have not. In nearly all recent epidemics, whether extensive or not, it is the sanitary authority that has always taken the initiative in stamping out the disease, and if such authority had the direct control of vaccination its officials would have immediate cognisance of those persons and localities most likely to be affected.

The abolition of the office of public vaccinator would certainly meet with very strong opposition, but I have for a long time held the opinion that public vaccination is the cause of a very great deal of the objection to vaccination. If vaccination is performed privately it is almost certain that, with due precautions, it would be more general and that the percentage of unvaccinated children would very largely diminish. Each medical practitioner would be supplied by the sanitary authority with a numbered form, the details of which will shortly be considered, and when a child had been successfully vaccinated this form would be transmitted to the medical officer of health. At present the public vaccinators vaccinate, roughly speaking, about two-thirds of all the children vaccinated. That they do their work well no one will deny, but the system adopted is out of date and cumbrous, whereas this system would simplify matters very much. When the Infectious Disease Notification Act was passed some medical men prophesied that it would never work and stated many objections to the Act. Experience has shown that these objections were groundless, and speaking from my own experience the Act is carried out economically, quickly, and with little or no friction between the medical attendant and the officials. It might be said that it throws an additional burden on the general practitioner, but I do not think this Northampton 74·6, Banbury 43·1, Eastbourne 65·1, Halifax burden will prove a heavy one, and, besides, his additional work will be remunerated at a fair rate. Each general practitioner becomes practically a public vaccinator, and as long as the form is filled up conscientiously and the instructions thereon carried out it will be immaterial as to whether the vaccinator performs the operation privately or at his surgery. It is the experience of every general practitioner that he does not vaccinate on the average more than one-third of the children whose mothers were attended by him in their confinement. By this system he would probably vaccinate all, or at least all who were still his patients. Again, revaccinations ought to be paid on the same scale as primary vaccinations, and should public opinion become more educated as to the necessity of this the general practitioner will secure a sure though small addition to his income. This will be secured without any great addition to the rates, as if the profession at large would be satisfied with a moderate fee the money now spent in carrying out the Vaccination Acts would be almost sufficient.

Another factor to be considered is the personal influence of the general practitioner. The respectable working class, to which class the larger proportion of unvaccinated children belong, would be more readily influenced by the advice of their private medical attendant in this matter, and they likewise believe, whether rightly or wrongly, that their own medical man takes more pains in the selection of the lymph used. They could also be more readily brought to realise the enormous benefit, both physically and financially, to be derived from efficient vaccination. Parents much prefer taking their children to their own private medical attendant to be vaccinated, and it is the experience of most medical men that it is not among the parents of those children vaccinated by them that the objection to the operation of vaccination is strongest.

In the next proposed amendment no one, not even the vaccination officer himself, can take offence, as under the present Act his position is a precarious one, and one not at all well remunerated. It may be said that the system of payment by results is a very logical one, but in a matter of this kind it is time, I think, that the system were altered In parishes and districts where the vaccination officer devotes all his time to these duties, and these districts are few, only a simple transfer would be necessary, but in other districts, though not in all these latter, the work might be done by the present sanitary staff. That this is possible is open to discussion, but judging from the thorough knowledge which the sanitary inspectors of the parish of Wandsworth possess of all the various duties which fall to them, I personally would have no hesitation in saying that the duties of vaccination officers could without difficulty be added to their existing duties, and that without lessening the thoroughness of their work under the Public Health Act. In most parishes an increase in the clerical staff would be necessary, but this would not be a serious item, and the services of this official could easily be utilised by the health officer for other clerical work.

The next proposed amendment is one which I would not strongly insist on, but we have the experience of the northern portion of this island to guide us in this matter. In Scotland the limit has always been six months, and there the objection to vaccination is not nearly so pronounced as in England. After twelve years' experience in the north I can speak with certainty on the point and can assert that in all these years I only met with one pronounced anti-vaccinationist. General statements are not, however, so convincing as actual figures, and if we look at the returns of the Registrar-General for Scotland for 1889 and 1890, which are the latest reports in my possession, we find that in 1889 122,847 births were registered, and 3226 of these were unaccounted for—a percentage of 2·63. In the county of Lanark, the most populous county in Scotland, this percentage was 2·5 nearly. In 1890 the percentage for all Scotland was 2·48. Compare this with the returns for England, where the proportion of cases unaccounted for was 9·4 per cent. and for the metropolis 12·2 per cent., excluding postponed cases. The later returns for England, and especially for the metropolis, show a decided increase. In 1891, the latest complete return, the percentages were 14·7 in the metropolis and 11·4 in the rest of England. This is largely explained by the apathy of boards of guardians consequent on the long-delayed report of the Royal Commission on

Vaccination. The following table shows the percentages for the years 1880–1890:—

Percentage of Births "Unaccounted for."

Year.	Metropolis.	Rest of England.	Scotland.
1880	7·0	4·5	1·89
1881	5·7	4·3	2·05
1882	6·6	4·5	2·09
1883	6·5	4·9	1·97
1884	6·8	5·3	2·19
1885	7·0	5·5	2·29
1886	7·8	6·1	2·39
1887	9·0	6·7	2·45
1888	10·3	8·2	2·51
1889	11·6	9·6	2·63
1890	13·9	10·9	2·48

One reason for proposing this amendment is that some parents have a strong objection to the vaccination of their children at such a tender age, and not because of their non-belief in its efficacy as a preventive of small-pox. This objection is, from a parent's point of view, a reasonable one; and if, as can be shown in the case of Scotland, the spread of small-pox has not been influenced by this cause alone, and that some objectors to the operation would be silenced, the extended limit might be included among these amendments. From the medical aspect also it might be contended that this extended limit is desirable. I am sure it is the experience of many of us that infantile eczema frequently begins between three and six months, and some of us may have had the unpleasant experience of having been told by parents that such eczema was due to vaccination. This would in some, though not in all, instances be avoided by the extended limit. Any change which is to be made in the vaccination laws must allow for popular opinion, and this extended limit is one which has been frequently put forward by parents who do not on principle object to vaccination. The certificate of successful vaccination is, when filled up, to be sent to the medical officer of health of the district or parish where the child was registered. At present the vaccination forms have a postage stamp affixed to them and there is no reason why the present practice should not be continued. This change would be a very great advance, as all children could be accounted for except those who died before vaccination. Under the present law many children, owing to their parents' peripatetic habits, escape vaccination, and the vaccination officer of the parish in which the child was born loses all trace of its whereabouts. In the parish of Wandsworth for the year 1893 1606 births were registered, and of these 153 had removed to districts unknown and only 3 to districts known to the vaccination officer. The majority of these unvaccinated children would sooner or later be detected by the sanitary officials in their ordinary house-to-house visitation and ordered to be vaccinated. In this case the certificate would necessarily be forthcoming. It would not be a difficult matter to train the present sanitary staff to recognise vaccine cicatrices, and the presence of these cicatrices would be sufficient proof that the child had been vaccinated, when such children had been registered in other parishes.

The form of certificate is one of the most important amendments proposed. The present certificate is faulty in that it does not state the number of insertions made or the number successful, and another important omission is that it does not state the source of the lymph used. In the certificate, then, we ought to have the name and age of the child vaccinated, the name of the parent or guardian, if the parents are deceased, the place of birth, and the place and date of vaccination. The number of insertions made and the number successful are very important, as the small number of insertions, and consequent inefficient vaccination, is a charge frequently brought against private vaccination. It is not necessary to enter into a discussion as to the greater amount of protection afforded by multiple marks, but I simply direct attention to Marson's well-known figures, which have never been contradicted; in fact, all the later statistics only serve to confirm Marson's conclusions that for efficient protection four vaccine marks are necessary. In addition, however, to the power of efficient vaccination in preventing death we have also to consider its power of preventing attacks of small-pox. In addition to the statistics obtained by the Privy Council as far back as 1863, in which the protective power between the best vaccination and the worst vaccination is represented by the ratio eleven to one, we have the overwhelming evidence adduced by Dr. Barry of the Local Government Board in the report of his inquiry into the Sheffield epidemic of 1887–88.

In every certificate of successful vaccination the source of the lymph ought to be stated, whether vaccinated with calf lymph (in which case the name of the institution should be given) or with human lymph. As every certificate would be numbered this number could be inserted instead of a name, and every medical man would thus have a correct record of all the sources of lymph used by him. It would be the duty of the sanitary authority to keep a record of these, and thus in any case of suspected inoculation of any disease by means of vaccination the source of the lymph could be at once ascertained. This is, of course, done at the present time by public vaccinators, but very few medical men other than these keep a satisfactory record of the sources of their lymph.

The fee for the performance of vaccination ought to be paid by the sanitary authority at a fixed rate—at least, in towns and urban districts. In some rural districts the fee would require to be more elastic, although if the child be brought to the house of the vaccinator the same fixed fee would suffice, the amount of this fee ought, in my opinion, to be 3*s.* 6*d.* This is higher than the fee under the Notification Act, but in the latter the physician has no actual expenditure, whereas in vaccination the cost of lymph has to be considered. The parent or guardian ought distinctly to understand that the fee does not include any further attendance other than the act of vaccination and the inspection of it seven days thereafter. Further medical or surgical attendance ought to be paid for by the parent or guardian. The registrar at present sends the list of births as well as of deaths of infants to the vaccination officer and is paid a fee for so doing, so that the amendment that these be sent to the medical officer of health will cause no additional expense. No one knows what the Royal Commission on Vaccination will recommend, whether a continuation of the present system or an alteration of it in some slight way; but I am certain that a Bill on the lines I have mentioned would be more satisfactory as regards the efficacy of vaccination and that many objections to the operation would be thereby removed. The preliminary report issued by the Commission has been productive of no little harm; but it is to be hoped that better counsels will prevail, and that the report will emphasise the necessity of primary vaccination and the advisability if not the necessity of revaccination.

Church-row, S.W.

LITHOTRITY IN CASES OF STONE: SIMPLE AND COMPLICATED.

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(Concluded from page 1132.)

WITH regard to stones retained in a post-prostatic pouch my experience has been, in the few cases I have had, that urethral lithotrity was very easily performed and afforded successful results. In the more advanced cases referred to by Buckstone Browne I see no alternative but suprapubic cystotomy. The third category of complications are those arising from the incomplete development of infancy and childhood; in other words, from the smallness of the parts concerned. My personal experience of stone in children has been but small. In Egypt the very great majority of stones occur in subjects over ten years of age. The tables given with this paper do not demonstrate this point, but on reference to my records I find that out of the 200 cases given in Table I. 9 only were in children under ten, whereas Cheselden in 213 cases met with 105. In India, on the other hand, the proportion of children operated on is exceptionally large. The difference is due to the fact that stone in Egypt is principally caused by the alterations produced in the urinary system by the presence of Bilharzia

embryos, and that the Bilharzia parasite, while very common in adult males, is rare in women and children. The relative values of the various operations for children have been frequently discussed of late years in the medical journals. The Indian surgeons especially, following the example of Keegan and Freyer, have published many records and have very strongly advocated lithotrity for children of all ages. The results they have obtained have been remarkably good and equal—at least, the best results given by lithotomy. While, however, it must be accepted that the method is an excellent one as practised by experts, it is by no means certain that the general surgeon will find its adoption satisfactory. The conclusion I have come to is that when a surgeon is likely to have to treat many cases of stone in children it will be advisable for him to acquire the necessary ability that practice only can give, but that the surgeon called upon to treat such cases occasionally only will do better by keeping to the time-honoured operation of Cheselden. I have quite lately come across very useful information on this head in a paper by Gilbert Barling.[1] In it are given the results of 152 operations performed in various English hospitals between 1888 and 1892 on children under ten years of age. Of these, 43 were litholapaxy with 1 death, 46 were suprapubic lithotomies with 10 deaths, 48 were lateral lithotomies with 2 deaths, and 15 were median lithotomies with 1 death. These figures, giving the experience of many surgeons, represent, I think, the relative values of the different operations more fairly than the results obtained at the hands of a few specialists. It fully bears out what has been my opinion for long past that the results obtained by suprapubic operation in children are far from justifying the preference given to it in some quarters. Any considerable statistical evidence in its favour is still wanting, and this while statistics, to be counted by many hundreds, have been published by various operators showing a mortality of greatly under 5 per cent. for litholapaxy and perineal lithotomy. The fourth category of complications are those arising from old age and its degenerations, and it is in avoiding the dangers due to these complications that the most real difficulties of the surgeon lie. To-day, thanks to the great improvements in instruments and methods, and especially to the cleanliness so universally practised, the mortality rate of stone operations in children and adults is, at the hands of experts, almost *nil* or, as it might perhaps be expressed, it is reduced to the personal equation of the operator. When once the true percentage mortality of an operation or class of operations has been brought down to zero by any operator, as it has been done by more than one surgeon in India, in the case of stone, it is hardly justifiable to talk of the dangers inherent to the operation. I advisedly use the term true percentage mortality, being of the opinion that no percentage mortality can pretend to truth, and, therefore, should not be estimated until the number of cases cited can be counted by centuries. It is unjustifiable to calculate a percentage mortality from 99 cases as from one case, and I would express proportions deduced from such numbers as relative mortalities, taking for expression of the ratios the lowest possible whole numbers, thus 1 in 15 or 2 in 31. While, however, the percentage mortality of stone operations has been reduced almost to *nil* in adults and children, the results are quite otherwise when dealing with the aged. Old subjects support most operations fairly well, amputations are constantly successfully performed in extreme old age, and ovariotomy in very old women is almost as successful as amongst the young. Shock, if great care is taken to prevent loss of heat, is probably less marked in the old than in the young after operative interference. Old tissues, so long as elimination of effete products is fairly carried out, are probably not such suitable media for the development of most micro-organisms as the juicier tissues of the young. While, however, the susceptibility to attack is perhaps diminished, the power of expulsion of morbid products is generally greatly lowered. In youth and middle age the individual can assimilate most things, from the living organisms of various diseases to the toxines of lobster salad, with certain trust in his powers of elimination. In old age, while the resistance to attack by living organisms is perhaps greater, the powers of elimination are probably much diminished. The epithelial surfaces from their increased dryness and rigidity are perhaps more efficiently protective than when in a younger stage, but their power of excretion is proportionately enfeebled. It is probable that a preponderant share of the work of elimination is in old subjects carried on by the kidneys, and any morbid condition of the urinary apparatus has therefore a special importance. It is, moreover, in connexion with the urinary system that occur the local complications usually attending stone in old men. Chronic gouty or other changes in the kidney, atony of the bladder and cystitis, obstructive enlargement of the prostate, are often the accompaniments if not the original cause of the calculus. An old man the subject of such morbid conditions is already in a perilous condition, and the scales of life and death begin to balance. A slight addition to either means its preponderance, but the result is likely to be in the one case only temporary and in the other permanent. The first question that arises, therefore, is whether under any conditions any attempt should be made to remove the stone or not. It is difficult to adduce any evidence on this point. There are many statistics showing the mortalities of stone operations in the aged, but I know of none showing what percentage of the cases met with had been operated on. The mortality attending any form of stone operation under the conditions mentioned must be high, and, on the other hand, the inconvenience produced by the stone is under such circumstances, as has been pointed out by Sir Henry Thompson, not unfrequently comparatively slight. Further, even in what are reckoned in statistical returns as successful cases the amount of relief after operation may be but slight. I think, however, the general opinion of the profession, and more especially of operators, is that relief should be attempted in practically all cases except those in which the condition of the patient is such as to contra-indicate all interference from fear of immediate death.

Having decided on operating, the question still lies as to which method should be pursued. Here I think there is but little doubt. Opinion is universally in favour of the crushing operation. In the paper above referred to 155 of the cases were in subjects aged over sixty years. Of these 118 were operated on by litholapaxy, with a mortality of 11, equal to about 9·2 per cent.; 26 by suprapubic lithotomy, with a mortality of 8, equal to very nearly 1 in 3; and 11 by perineal lithotomy, with a mortality of 2. Of course, in these as in other statistics the relative mortality of the operations may depend on other factors than their intrinsic merits, but the table is particularly valuable as showing the great preference accorded by surgeons in general to the crushing process in the treatment of stone in the aged. Still, even by this the most favourable method the mortality is very considerable. I am inclined to attribute the dangers of lithotrity in old men to two principal factors—firstly, the bruising of the urethra, neck of the bladder, and prostate by the frequent introduction of the instruments; and secondly, to the effect on a weak bladder of over-distension during the evacuating process. I think that anything which tends to diminish these two dangers would largely increase the advantages of lithotrity. I have sought to obviate the first factor by uniting the crusher and evacuator in a single instrument—the evacuating lithotrite referred to previously. I have alluded to the use of this instrument in simple stone cases, but it is in the treatment of the class of complications now under notice that its chief use is likely to be found. My experience of it is not yet sufficiently large to express any opinion of its value, but I think that it is worthy of trial. In order to obtain success in this as in other forms of stone operations in similar cases attention is necessary to the minutest details. The patient should be kept in bed for at least two days before operation; he should be kept on a regular nourishing diet suitable to his general condition. Milk should if possible be taken in quantity. The bowels should be gently opened on each of the two days by saline purge and enema. Any catheterisation that is necessary may be carried out, but I think that the more the urethra and bladder are left alone the better. I consider it to be a good routine practice to give from fifteen to twenty grains of diuretin twice daily during the two days. I think that this drug is very useful for washing and cleaning out the urinary and general system and is an excellent general stimulant. A good night's rest should if possible be obtained before the operation, which I think is best performed as early in the morning as is consistent with the comfort of the patient. During the operation the greatest care must be taken to avoid any loss of heat. The room must be well warmed and the patient, especially his extremities, well covered. Eggs, milk, and stimulants should be taken from one to two hours previously. The

[1] Brit. Med. Jour., March 9th, 1895.

question of anæsthesia is very important. Ether is, I think, in such cases often dangerous from its possible after-effects. Chloroform is preferable, although not free from danger; of other general anæsthetics I have no experience. I believe, however, that the use of an instrument capable of terminating the operation with a single introduction will obviate to a great extent the necessity for an anæsthetic. I have experimented with various drugs locally, but as yet without great success. Cocaine as an injection is, I think, too dangerous. Antipyrin in a 5 per cent. solution diminishes sensation considerably. Methylene blue in a 5 per cent. solution is even more effectual, but still does not sufficiently abolish sensibility. Up to the present I prefer to use chloroform narcosis, but I have found that a very small quantity of the drug is sufficient.

It is very important to use the largest instrument that can be introduced without putting any undue strain on the urethra. If small instruments be used the fragments extracted must of necessity be small and the operation in consequence prolonged. A fair idea of the capacity of the urethra may be gained from the size of its orifice. In most cases a No. 16 evacuating lithotrite may be used; in many, however, a No. 14 is the largest which can be easily introduced. The instrument must be well oiled and warmed and introduced with the minutest care. The point of the lithotrite having been introduced into the orifice should be allowed to find its own way down to the membranous portion of the urethra. The weight of the instrument is quite enough to effect this, and the left hand of the operator should only be used to keep it first horizontally and then perpendicularly in the middle line. During this passage the urethra must be put at its full stretch by pulling the penis vertically upwards with the right hand. There is a tendency for the lithotrite to be arrested on entering the membranous urethra, and it is here that the skill of the practised operator is required to ensure an uninterrupted, regular passage into the bladder. The moment before this arrest would take place the right hand of the surgeon leaves the extended penis and applies through the medium of the second and third fingers a pressure to the heel of the lithotrite. This, accompanied by the gradual depression of the handle between the legs of the patient, carries the jaws of the instrument smoothly through the membranous constriction, over the ridge of the prostate, and into the cavity of the bladder. It is during this moment, and at this time only, that any propelling force should be given by the left hand to the lithotrite.

It is my practice to wash out the bladder two or three times with boracic acid solution before proceeding to crush. I consider this process beneficial inasmuch as it cleans out the bladder before any considerable injury to the mucous membrane has taken place. For this washing out I always employ, as before stated, the hydrostatic douche at an elevation of about thirty inches. I generally leave from four to six ounces of solution in the bladder. The position of the stone is then carefully recognised and its seizure gently effected. The screw is applied slowly and deliberately. The stone is then crushed and the process repeated as often as possible until the débris is sufficient in quantity to become a hindrance. The evacuating syringe is then applied to the handle, the stop is withdrawn, and the male blade protruded. The bladder is then very carefully washed out, only a very small quantity of fluid being injected. This process of crushing and evacuation is continued until the stone is completely removed. This fact may be ascertained first by the absence of the passage of any débris and of the click of any large fragment against the jaws, and secondly by thoroughly exploring the bladder with the closed lithotrite. When using the instrument as a sound the blades should be screwed tightly home so as to prevent any rattling. The instrument is then withdrawn, leaving, as I have found best, from four to six ounces of boracic solution in the bladder. This operation, if carefully conducted, inflicts a minimum of damage on the urinary passages. It requires, however, great delicacy of manipulation and is apt to be more prolonged than lithotrity with the ordinary instruments. Two points should always be regarded in operating on old men: firstly, to practise the most extreme gentleness compatible with rapidity; secondly, to thoroughly explore the post-prostatic pouch and at the same time to fully utilise the advantages presented by it as a trap for fragments. The after-treatment of such cases is often as important as the operation itself. The bladder treatment should be entirely symptomatic. If it empties itself completely it should be allowed to do so; if not the urine should be drawn off with a sterile catheter every four or six hours. An alkaline condition of the urine should be treated by bladder douches, of which the best is, as I have found, a weak solution of permanganate of potash. A diminution of quantity of the urine should be obviated by demulcent drinks, such as barley water, and if necessary by diuretics, of which I think the best is diuretin. The patient's strength must be maintained by good feeding and by the exhibition of stimulants in such quantity as may be required. In case of febrile symptoms arising salicylate of soda, together with cognac, should be freely used. It is, of course, self-evident that the mortality of stone operations on the aged can never be reduced to the ratios obtained with youths and adults; still, a careful attention to details will considerably diminish the mortality dependent on senile changes. These changes, however, not only largely increase the dangers of the operation, but also in some cases from local alterations render its performance much more difficult. The alterations of the prostate, either in the form of general hypertrophy or the production of tumour, may be such as to cause in the first place great obstruction to the introduction of instruments into the bladder, or in the second more or less complete ensaculation of the calculus. The first difficulty, obstruction to the introduction of instruments, is usually to be overcome by careful manipulation. In some few cases the obstruction may be complete, and some form of cutting operation becomes necessary both for the relief of the retention of urine and for the removal of the stone. In the great majority, however, a fair-sized instrument may be introduced. It is in these cases that the evacuating lithotrite, if it can be introduced, is of chief benefit, as a single introduction of it allows of the completion of the operation. Here, as in most other cases of difficulty in introducing instruments into the bladder, a finger in the rectum is of the greatest assistance.

The retention of the calculus in a pouch behind the enlarged prostate is a matter of much greater importance. In the simpler examples of this condition, in which there exists only a dilatation of the normal trigonal pouch, operation is, as I have before remarked, rather facilitated than otherwise. Where, however, the pouch is more or less separated from the general bladder cavity by constriction of its upper margin, or where, as described by Buckston Browne, an overhanging tumour of the prostate entirely hides the calculus, lithotrity may become extremely difficult or even impossible. Under such circumstances relief can perhaps only be given by some cutting operation, but lithotrity should be, I think, attempted in most cases. It is sometimes possible to dislodge the stone by pressure exercised by a finger in the rectum. In such cases, however, a new point comes into consideration—the treatment of the complication itself. Many operations have lately been performed for prostatic tumour and with very encouraging results, such operations being nearly always performed through a suprapubic opening into the bladder. It becomes, therefore, a matter of consideration as to whether it would not be advisable, in all cases of stones co-existing with any considerable enlargement of the prostate, to remove both stone and tumour through the same opening. There are, however, several indications against the procedure. In the first place the results of lithotrity are, from the point of view of mortality, at any rate greatly superior to those of suprapubic lithotomy. Secondly, the diagnosis of a prostatic tumour likely to be benefited by operation is very difficult so long as a stone is present. Thirdly, after removal of the stone the prostate may give but little inconvenience. Fourthly, the wished-for diminution of the prostate may perhaps be more safely obtained by castration.

I would say, therefore, with regard to the treatment of stone when complicated by old age and its degenerations, that (1) lithotrity is attended in such cases with very much less mortality than any cutting operation and is, therefore, to be performed when possible; (2) that a further advantage may be gained in lithotrity by the use of an evacuating lithotrite; (3) that the minutest care is necessary in all such operations; (4) that where the stone is complicated by evident prostatic tumour the safer plan is to treat the stone first by lithotrity and then to determine on the nature of the interference necessary for the treatment of the prostate; (5) that some cases cannot be operated on by lithotrity and that some cutting operation, preferably suprapubic lithotomy, is necessary; and (6) that lithotrity in difficult cases may be greatly assisted by the manipulations of a finger in the rectum.

The next varieties of complications that I have to refer to are those arising from the various pathological conditions of the urinary system. The conditions usually considered of importance are organic disease of the kidneys, cystitis in all its varieties, new growths of the bladder, urethral obstruction, prostatic hypertrophy and tumour, and tendency to hæmorrhage. Organic disease of the kidneys, as evidenced by the quantity of urine passed and by the presence of urinary casts, undoubtedly furnishes a very important item in prognosticating the result of any operation. Still, there is no condition of the kidney which could be taken as a contra-indication to operation. When, however, the question arises as to which operation, the crushing or the cutting, is likely to yield the better result it becomes very difficult to adduce trustworthy evidence. Lithotrity has, however, proved itself to be the best operation for cases of stone in general; and as pre-existing kidney disease is generally held responsible for the fatal results occurring amongst patients of middle age, this operation, yielding as it does the smallest general mortality, is probably the best suited to meet this special complication. The existence of severe cystitis is also an important element in cases of stone. Here, however, we stand on much surer ground in deciding between the merits of the two operations. The cystitis which is so frequent a companion of stone generally disappears after its removal. My experience has been very clear on this point, that the cure of the cystitis after lithotrity has been as certain as after lithotomy. As to the rapidity of the cure evidence is lacking, as until the urine passes per urethram instead of by the perineal or other wound it is difficult to determine the condition of the bladder. In lithotrity cases, however, the cystitis is usually cured long before the period at which a lithotomy wound is closed. I consider, therefore, that the presence of cystitis, however severe, is no contra-indication to lithotrity. There are, however, two points which must not be lost sight of. The one is that fever is by no means uncommon after lithotrity in severe cases. This fever is, I believe, as a rule due to septic absorption from the bladder and urethra and may call for active treatment. The rise of temperature may be accompanied by diminution in the quantity of urine secreted, a condition which cannot fail to give rise to anxiety.

The treatment of these complications after lithotrity has in Egyptian subjects been so successful as to become practically a routine. If there is fever salicylate of soda is given in doses of 1 gramme every two hours for four doses and then every four hours as long as necessary. If there is diminution of urine diuretin is given in similar doses every four hours. When there is persistent cystitis the patient receives 0·30 grammes of methylene blue daily. This latter drug I have found most useful for cystitis, and it is particularly beneficial from its anodyne action. In very severe cystitis, especially if accompanied by atony or by a cystic condition of the bladder, whether after lithotrity or otherwise, a perineal incision and drainage of the bladder is the most certain cure. Still, although in a few very rare instances a lithotrity may require to be followed by a perineal incision, it is better in my opinion to resort to the cystotomy as a secondary than as a primary operation. The presence of a tumour in the bladder greatly complicates any stone operation, so much so that one would be justified rather in looking upon the tumour as the important disease and the stone as the complication. In most cases, however, the tumour is unsuspected until disclosed by the operative procedures; in many cases even the suspicion does not arise until after removal of the stone symptoms persist the significance of which was previously masked by its presence. In a few cases the presence of a tumour may be suspected from the results of sounding or other examinations. As to symptoms, I would call attention to two only: the first is the presence of an unusually large quantity of blood in the urine, which frequently occurs in these cases and should raise suspicion, and the second is the passage by the urethra of a fragment, microscopical or other, of a tumour, which seldom occurs, but which assures diagnosis. The age of the patient has a certain importance. In my experience the simple papillomatous tumour of the bladder exists much more frequently in youth than in adult life. Age, of course, predisposes to malignant tumours. The signs yielded by a benign bladder tumour on examination are, as a rule, not very evident, and their detection is, of course, rendered much more difficult by the existence of a stone. A small mobile papilloma has been detected by a sound, but in my own experience, at all events, it has been detected more often than it existed. A villous tumour is, I believe, not capable of detection by any manipulation except in very rare cases. The examination should always be bimanual—that is to say, between the sound in the bladder and a finger in the rectum, between the same sound and a hand over the pubis, and between the finger in the rectum and the hand over the pubis. A large carcinomatous infiltration of the bladder may be generally very easily recognised; smaller tumours, however, although malignant, frequently escape detection. The cystoscope may be used in doubtful cases should the condition of the urine admit of it, and in practised hands may yield very useful information. During the operation for stone the tumour, if of any size, may usually be detected. Any form of cystotomy, laying the bladder open as it does to digital exploration, renders its detection very easy. This exploration can be carried out most easily through a suprapubic incision, but can in most cases be as effectually performed through a lateral perineal wound. During lithotrity also a tumour is, I think, generally detected unless very small. It may show itself by extra difficulty in the manipulation of the lithotrite. In most cases fragments of tumour are brought away either in the jaws of the instrument or through the evacuator. A bladder tumour having been detected in conjunction with a stone, what is the best line of treatment to pursue? The course to be pursued depends on the age of the patient, the probable nature and size of the tumour, and on the size of the stone. If the patient be young, the tumour probably benign, and the stone not very big, the removal of the stone should be considered as secondary to the removal of the tumour, and therefore a suprapubic cystotomy be performed. In a similar case, should the stone, however, be large, I think that the safer proceeding would be to remove the stone first by lithotrity and to perform a suprapubic cystotomy later for the removal of the tumour. I am led to this conclusion by the fact that whereas the mortality after suprapubic cystotomy for tumour is small the same operation for large stones is still attended with great risk. On the other hand, should the tumour have bled freely, especially after examination with a sound, the suprapubic operation should, perhaps, have the preference, as lithotrity in such a case has been followed by very severe or even fatal hæmorrhage. Should the patient be old, should the tumour be probably malignant, and should the question of extirpation of the tumour be not entertained I should recommend the removal of the stone by lithotrity. I have performed this operation in three cases of evident carcinoma of the bladder—in all with success. The presence of the tumour, while rendering the operation more difficult and necessitating great care, produced no untoward after-symptoms. I would say, therefore, that in a case of stone and tumour diagnosed as existing in the same bladder the choice of operation lies between suprapubic cystotomy and lithotrity, and that the first is in general indicated whenever the tumour is to be removed and the second whenever this is impossible; that in the case of a very big stone it may be advisable to do the two operations at different times; and, finally, that the presence of a tumour, unless it be very prone to hæmorrhage, is not an indication against the performance of lithotrity. Urethral obstruction may, of course, be an absolute bar to lithotrity. Generally, however, the stricture is capable of cure, and then the question may arise as to the superiority of the various methods for the removal of the stone. If the stone be small I should consider the stricture as the more important, and should treat it first by dilatation or (in bad cases) by perineal incision. In the first case I should remove the stone by a subsequent lithotrity and in the second I should remove it at once through the perineal wound. On the other hand, should the stone be large (say, over thirty grammes) I should consider it to be the more important disease—firstly, on account of its size, and secondly, because the introduction of large crushing instruments is often difficult, even after complete dilatation of a stricture. In such cases I should recommend a perineal incision, followed by crushing of the stone and its removal through the wound. Where the stricture is such as not to admit the smallest staff it may be advisable to dilate the urethra first and then to perform perineal lithotrity. Briefly, then, I would say, when the stricture is incurable and no staff can be introduced suprapubic cystotomy becomes almost a necessity. When the stone is large and a staff will pass perineal lithotrity is preferable; when the stone is small the stricture should be treated by dilatation and urethral lithotrity subsequently performed. Prostatic hypertrophy

and tumour I have already referred to in treating of senile degenerations. The tendency to hæmorrhage I have referred to under the observations on bladder tumours. I have never met with anything approaching to severe bleeding in any crushing operation. Should it occur the best method of treatment is to wash out the bladder with a large lithotrity evacuator and syringe. Should it recur, and should the various hæmostatic local applications in the form of bladder douches be ineffectual, I would drain the bladder by a perineal incision and wash it out with an iced creoline solution every two hours. The last category of complications are those arising from the general health of the patient. On this point there is but little to be said. I know of no condition except impending death from other causes than the presence of a stone which contraindicates operation. Heart disease is, unless extremely advanced, rendered innocuous by anæsthesia. Affections of other organs, although requiring the most careful attention before, during, and after operation, do not exclude its performance. Hæmophilia, an extremely rare complication of stone, renders operative interference more than usually imperative, and in such a condition lithotrity is clearly indicated. The general condition of the patient, therefore, may be said to present no indication against the operative treatment of stone, neither does it, with the exception of hæmophilia, specially indicate any one operation. The operation which gives in general the smallest mortality is, however, most necessary when the chances of mortality are increased, and lithrotrity therefore in such cases imposes itself.

In recapitulation I would say:—(1) That litholapaxy—i.e., lithotrity at a single sitting—is certainly the operation of election in all simple cases of stone in the urinary bladder; (2) that the difficulties of lithotrity increase with the size of the stone, but that no stone is too large or too hard to be crushed, and that the results obtained by lithotrity in dealing with stones over two ounces in weight are greatly superior to those ever obtained by any other method; (3) that in cases of large and hard stones in which, from the lack of operative skill and experience, urethral lithotrity is abandoned the best results will be given by a crushing operation performed through a perineal wound; (4) that difficulties in grasping a stone may be obviated by the use of suitable instruments and by cautious dilatation of the bladder; (5) that a considerable proportion of stones encysted in various ways may be removed successfully by lithotrity, and that only when this has been attempted and has failed should cystotomy, preferably suprapubic, be reverted to; (6) that lithotrity is the operation of election in the presence of nearly all morbid changes of the genito-urinary apparatus and should always be attempted, the necessary treatment being afforded to the complication either before or after its performance as required; (7) that in children its results are particularly favourable when carried out by experts, but that for the present lateral lithotomy is the safer operation in many hands; (8) that in the presence of senile degenerations and of morbid alterations of the general system lithotrity is by far the best operation and should be carried out whenever possible; and (9) that the completion of the operation by means of a single instrument—the evacuating lithotrite—may be advantageous, especially when dealing with old subjects.

Cairo, Egypt.

STREPTOCOCCUS PYOGENES AND ANTI-STREPTOCOCCIC SERUM.

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THE results here detailed refer for the most part to attempts made by Dr. Armand Ruffer and myself to render large animals immune against streptococcus pyogenes for the purpose of obtaining a specific therapeutic serum. The experiments were begun by Dr. Ruffer in the spring of 1895 and in autumn the partially immunised animals were taken over by me for the completion of the process of immunisation. Two horses have been immunised against streptococcus pyogenes alone; two others were first rendered immune against diphtheria toxine and then against streptococcus pyogenes, in the hope that the serum would be of value in antagonising the action of the very common polymicrobic infection, the Klebs-Löffler bacillus and streptococcus pyogenes. At first considerable difficulty was experienced in keeping the cultures of streptococcus alive through several generations. Further, the method of passage, although early resorted to, was only partially successful on account of the rapid loss of virulence of the micro-organism in ordinary liquid nutrient media. In July, 1895, Marmorek published an article on the streptococcus and described certain media in which the virulence obtained by passage could be maintained for a greater or less length of time. Since this publication we have used these media exclusively and have in the main been able to confirm Marmorek's observations. Human blood serum (two parts) and peptonised bouillon (one part) undoubtedly form the best medium; on account of the difficulty of obtaining human blood in quantity we have also used ascitic fluid bouillon. It must, however, be remembered that ascitic fluid from different patients varies a good deal. Some samples conserve the virulence of the micro-organism well, whilst others are distinctly inferior in this respect. A mixture of two parts donkey's serum and one part of bouillon is also good, although inferior to ascitic fluid. The fact that the passage of the streptococcus pyogenes through a series of rabbits increases the virulence of the microbe is an old one. The method of obtaining the greatest degree of virulence in the shortest possible time is to commence the series of passages by intravenous inoculation with intermediate cultivation from the cardiac blood. After one or two passages the series should be continued by subcutaneous inoculations in the abdomen, with subsequent cultivation from the liver. The streptococcus used in these experiments was obtained by Dr. W. R. Smith from a case of erysipelas in University College Hospital. Its pathogenic action at first was weak. Two cubic centimetres of bouillon culture killed the first rabbit in three days. A small quantity of the culture which escaped into the subcutaneous tissue of the ear produced a typical "ear erysipelas." Cultures were made from the cardiac blood in ascitic fluid bouillon, and after a sojourn of eighteen hours in the incubator a second passage was made. After the third passage the cultures, in gradually diminishing doses, were inoculated subcutaneously, and cultivations for the continuance of the series were made in serum bouillon. By the end of three months a very high degree of virulence was obtained, the animal succumbing in from twenty-four to thirty-six hours with general streptomycosis. At the point of inoculation a slight exudate is observed. The viscera are all congested and pleural and peritoneal exudates are frequent. Cover-glass preparations show that the organs are teeming with cocci. In animals dying within thirty hours we have found these almost exclusively in the form of diplococci. Sometimes the diplococci looked as if surrounded by a capsule. Cultivations made from the liver showed that up to three or four hours after inoculation the diplococcic form prevailed. By the sixth or eighth hour the cocci were in short chains of from four to eight members. In from eighteen to twenty-four hours the chains were often so long as to extend unbroken across two or three fields of the microscope—a veritable streptococcus longus. The inoculation of these very long chains caused death in rabbits more slowly than the diplococci, but post mortem diplococci were again almost exclusively found if the examination was made immediately after death. Where the necropsy was performed several hours after death (animals dying during the night) short chains were found in the exudates into the serous cavities and even in the blood. From the observations we have made we believe that the distinction of streptococci into varieties depending on the length of the chains (Behring, von Lingelsheim, Kurth, Knorr, and others) is not of much value.

IMMUNISATION OF HORSES.

1. Black cob mare, weight 9 cwts. Between May 11th and July 22nd, 1895, 415·5 c.c. of bouillon cultures from successive passages in rabbits were injected hypodermically in doses varying from 0·5 c.c. to 100 c.c. Each injection was accompanied by a large swelling at the point of inoculation and extending between the forearms along the front of the abdomen. Severe constitutional symptoms, fever, rapid breathing, &c., also showed themselves. During the last six months 498 c.c. of virulent ascitic fluid bouillon cultures have been inoculated, spread over twelve injections. The local reactions have been enormous and the temperature after each inoculation has been high (up to 105° F.). As a

rule the animal has shown great sensibility and sometimes abscess formation has resulted, the pus containing pure cultures of streptococci of very active pathogenic qualities. In the case of the inoculation of large quantities it has been found advisable to limit the amount injected at one point to 25 c.c. In this way the discomfort to the animal is materially lessened.

2. Heavy cart gelding, weight 15 cwts. Between April 6th and July 20th, 1895, 303·5 c.c. of bouillon cultures were inoculated in quantities varying from 0·25 to 60 c.c. As this animal was more refractory than Horse 1 we have been able in the last six months to inoculate 640 c.c. highly virulent cultures grown in Marmorek's media. The febrile disturbance following the injections has been marked.

3. Heavy cart gelding, weight 16 cwts. From Nov. 17th, 1894, to April, 1895, this animal received 3810 c.c. of diphtheria toxine. A sample of blood taken on April 17th was found to have very high protective properties when tested against diphtheria toxine. The immunisation against diphtheria was now stopped, and between April 22nd and July 20th 371·5 c.c. of bouillon cultures of streptococcus were inoculated, with an occasional dose of 300 c.c. of normal diphtheria toxine. From Sept. 20th, 1895, to Jan. 20th, 1896, 444 c.c. of ascitic fluid bouillon cultures were injected in doses varying from 3 c.c. to 110 c.c. At first this animal exhibited slight reactions in comparison with Horses 1 and 2. Later, however, the injection of highly virulent cultures caused severe local and general reaction. The discontinuance of the injections of diphtheria toxine was found to have led to a marked loss of antitoxicity of the serum, although the animal had remained highly immune. Since March 4th 300 c.c. of diphtheria toxine have been inoculated.

4. Heavy cart gelding, weight 15 cwts. As in the case of Horse 3, this animal was first immunised against diphtheria toxine. Between April 22nd and July 20th, 1895, 366·5 c.c. of bouillon cultures of streptococcus were inoculated. From Sept. 20th, 1895, to Jan. 22nd, 1896, 578 c.c. of ascitic fluid bouillon cultures were injected. From Feb. 3rd to March 5th 1360 c.c. of N_2 diphtheria toxine were inoculated. Like Horse 3, this animal lost a good deal of the antitoxicity of the serum against diphtheria toxine.

General remarks.—Horses 1 and 2, which had been immunised against the streptococcus alone, were throughout more sensitive than Horses 3 and 4, which were first immunised against diphtheria toxine. During the period of reaction all the horses have suffered in general health. They have also all suffered from patches of alopecia which, in the opinion of an eminent dermatologist who examined the hair and the skin, was comparable to the alopecia following severe febrile disturbance in the human subject. (Compare the severe alopecia frequently seen after facial erysipelas.) A temperature chart showed a characteristic rise of temperature after the inoculation of 50 c.c. of serum bouillon culture of streptococcus pyogenes. The temperature rose steadily from 38° C.—the normal temperature of the horse—at 4 P.M. to a fraction below 41° C. (105·4° F.) at 10 P.M. At 1 P.M. the decline began, and by the evening of the following day a point a fraction above the normal was reached. At various periods samples of blood were drawn to estimate the preventive and curative power of the serum, as also to determine the length of time during which the serum remains toxic after inoculation. Marmorek found that from 0·5 c.c. to 1 c.c. of serum taken fifteen days after inoculation killed rabbits weighing 1500 grammes in from five to ten days. In the following experiment Horse 4 was inoculated at 12 midnight, Dec. 4th, 1895:—

Rabbit 1, serum taken at 6 A.M., Dec. 4th = 5 c.c. subcutaneously injected; died in five days.
Rabbit 2, serum taken at 5 P.M., Dec. 4th = 5 c.c. subcutaneously injected; ill but recovered.
Rabbit 3, serum taken at 12 noon, Dec. 5th = 5 c.c. subcutaneously injected; alive and well on March 4th, 1896.
Rabbit 4, serum taken at 12 noon, Dec. 6th = 5 c.c. subcutaneously injected; alive and well on March 4th, 1896.
Rabbit 5, serum taken at 12 noon, Dec. 7th = 5 c.c. subcutaneously injected; alive and well on March 4th, 1896.
Rabbit 6, serum taken at 12 noon, Dec. 10th = 5 c.c. subcutaneously injected; alive and well on March 4th, 1896.

According to this experiment the blood serum does not remain toxic for so long a period as that found by Marmorek.

The curative effect of the serum in experimental streptomycoses is shown below. The serum of Horse 2 was first used. In this experiment the control rabbit received a minimal lethal dose and died in twenty-four hours.

Rabbit 1 received ten lethal doses intravenously + 0·05 c.c. serum subcutaneously.
Rabbit 2 received ten lethal doses intravenously + 0·02 c.c. serum subcutaneously.
Rabbit 3 received ten lethal doses intravenously + 0·01 c.c. serum subcutaneously.

The results were that Rabbit 1 was alive and well two months afterwards; Rabbit 2 died in twelve days from metastatic lesions; and Rabbit 3 died in six days from the same cause.

The serum of Horse 4 was next employed. The control rabbit died in thirty-six hours after a minimal lethal dose.

Rabbit 1 received four lethal doses intravenously + 0·01 c.c. serum subcutaneously.
Rabbit 2 received four lethal doses intravenously + 0·008 c.c. serum subcutaneously.
Rabbit 3 received four lethal doses intravenously + 0·006 c.c. serum subcutaneously.

The results were that Rabbit 1 showed no symptoms and is alive at the end of two months; Rabbit 2 died in five days with metastatic lesions; and Rabbit 3 died in seventy-two hours with streptococci throughout the entire body.

The preventive power of the serum of Horse 1 is shown in the following experiment, in which the control rabbit (which weighed 1350 grammes) after eight times the lethal dose died in twenty-four hours.

In Rabbit 1 (weight 1550 grammes) = 0·2 c.c. serum was subcutaneously injected on Feb. 19th at 10 A.M. + 10 lethal doses on Feb. 20th at 1 P.M., with the result that it was alive and well on March 16th.

In Rabbit 2 (weight 1600 grammes) = 0·05 c.c. serum was subcutaneously injected on Feb. 19th at 10 A.M. + 10 lethal doses of culture of streptococcus on Feb. 20th at 1 P.M. On March 5th it was alive and well, but died on March 7th with acute psorospermosis. There was no evidence of streptococci post mortem.

In Rabbit 3 (weight 1800 grammes) = 0·01 c.c. serum was subcutaneously injected on Feb. 19th at 10 A.M. + 10 lethal doses of culture of streptococcus on Feb. 20th at 1 P.M. It died on March 1st with streptococcic pleurisy and peritonitis and metastases.

In comparison with anti-diphtheritic or anti-tetanic serum the curative effect of anti-streptococcic serum appears to be slight; still, it must be remembered that the successive passage through rabbits renders the streptococcus so virulent that it is mortal to rabbits in very minute doses. Further, the horse must remain under treatment at least a year before the serum reaches its maximum anti-streptococcic strength.

With regard to the dose of serum, for severe cases of puerperal strepto-mycosis 10 c.c. should be injected on each side of the abdomen as an initial dose, followed by another of from 10 to 20 c.c. if the temperature has not fallen, but much larger doses can be given with safety. In streptococcic angina from 10 to 20 c.c. may be injected according to age. Experimentally we have found that 10 c.c. injected into rabbits cause no bad symptom whatever, and in the human cases already treated no unfavourable results have yet been recorded which could be referred to the serum itself. The true value of anti-streptococcic serum will remain doubtful for some time on account of the difficulty of diagnosing streptomycoses bacteriologically, for it must be remembered that the serum is specific against the streptococcus only and attempts to cure staphylo-mycoses by it will be failures (as in several reported cases where the diagnosis of staphylococcus was made only after death). In conclusion, I take this opportunity of thanking Dr. Armand Ruffer, lately Director of the British Institute of Preventive Medicine, for much help and advice throughout the whole work. To Mr. W. Robertson, Veterinary Surgeon to the Institute, I am also indebted for the notes and temperatures and clinical histories of the horses which have been immunised.

Sudbury, Harrow.

THE DIETARIES OF BENGAL GAOLS.

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IT has been lately stated in an English medical paper and in the public press in India that the scales laid down for the diets of native prisoners in the gaols of India, and of Bengal in particular, are deficient, one critic says, in albuminates, fats, and salts. The following note will, I think, show that there is no foundation for such statements, and that the diets supplied for native prisoners in the gaols of Bengal are sufficient and indeed liberal. It is not here necessary to occupy space in quoting the analyses upon which the following calculations have been based. They

have been taken from the standard authorities, Parkes, Wynter Blyth, Wanklyn, Bell, and König in Europe, and Dr. T. Lewis and Dr. Lyon in India. The following is the scale of diet ordered by the Bengal gaol code for prisoners confined in these gaols. I may say that we have in Bengal no progressive scale of diets, the only distinction made is between the diets for labouring and *non*-labouring prisoners.

Bengal scale (for labouring prisoners).—Morning meal (1 chitak = 2·05 oz.): rice, 4·10 oz.; or flour, 3·4 oz.; or suttoo (grain pulse), 3·7 oz.; with molasses, 1 oz., or salt, ½ oz. The other two daily meals are given at 11 A.M. and 5.30 P.M. They are as follows: rice, 22·55 oz.; pulse, 6·15 oz.; vegetables, 6·15 oz; salt, 0·76 oz.; condiments, 0·25 oz.; oil, 0·51 oz.; and tamarind, &c., 0·25 oz.; half at each meal.

This is the ordinary diet for natives of Bengal; the morning meal is varied as above. Still further variety is given by a change in the kind of vegetables issued and in the kind of pulse (*dál*), five different sorts of which, of practically equal nutritive value, are in common use. The nutritive value of this diet is given in Table I. No. 1 gives its value if rice is given for the "morning" meal, and No. 2 if "grain suttoo" is given instead of the rice at this meal. The values of these diet scales are given both in terms of the proximate aliments and in terms of nitrogen and carbon. As Professor Parkes has said, "The phenomena of nutrition are chiefly owing to the various chemical interchanges between nitrogen and carbon"; therefore, the amounts of these two elements in a diet furnish us with a convenient and simple index of the approximate nutritive value of any combination of food materials.

TABLE I.—*Bengal Scale Diet.*

—	Albuminoids(N×6·3)	Fats.	Carbohydrates.	Salts.	Nitrogen.	Carbon.
	oz.	oz.	oz.	oz.	gr.	gr.
No. 1.—Rice, pulse, &c. (rice for morning meal)	3·55	0·866	26·5	1·11	250	5777
No. 2.—Rice, pulse, &c. (grain for morning meal)	4·01	0·888	24·90	1·17	284	5781

TABLE II.—*Behar Scale Diet.*

—	Albuminoids(N×6·3)	Fats.	Carbohydrates.	Salts.	Nitrogen.	Carbon.
	oz.	oz.	oz.	oz.	gr.	gr.
No. 1.—Wheat, rice, &c. (rice for morning meal)	4·12	0·93	25·1	1·13	292	5867
No. 2.—Ditto (grain for morning meal)	4·58	0·96	23·5	1·18	327	5781
No. 3.—Wheat, maize, rice, &c. (rice for morning meal) ...	4·07	1·27	25·6	1·25	288	6130
No. 4.—Wheat, maize, rice, &c. (grain for morning meal) ...	4·53	1·29	24·0	1·32	322	5864
No. 5.—Maize, rice, &c. (rice for morning meal)	4·03	1·60	26·1	1·37	282	6306
No. 6.—Maize, rice, &c. (grain for morning meal)	4·49	1·63	24·5	1·30	318	6130

Table II. gives the nutritive value of the diets in use in that part of the province of Bengal called Behar. It is given to all prisoners in Behar gaols or to Behari or up-country men in all Bengal gaols. The difference between it and the "Bengal scale" diet consists in the substitution at one of the daily meals of wheat, maize, millet, or a mixture of these for part of the rice. This is in agreement with the dietetic habits of the people of this part of India. The staple food of the inhabitants of Bengal proper is rice; that of Behar is wheat or other cereal, as maize, millet, &c. The above tables, therefore, give the values of the diets in actual daily use of prisoners confined in gaols under the Government of Bengal. A glance at the standard diets given in all the text-books—e.g., Moleschott's or Pettenkofer's—will show how well these gaol diets compare with the standard ones of the above eminent physiologists. The relative value of the gaol diets, however, becomes still more great when it is considered that the standard diets above referred to are intended for Europeans with an average body weight of 150 lb. (69·5 kilos), whereas the average weight of Indian prisoners was taken by Dr. T. Lewis, F.R.S., as 110 lb. That this is a fair and even liberal estimate of the average weight of Indian prisoners is clear from the following considerations. Dr. Lewis put the average weight of Bengal prisoners at 105 lb. Dr. Lyon found 105 lb. to be an average weight of certain prisoners in a Bombay gaol, and I have found as the result of over 15,000 weightments collected in the Central Gaol, Bhagalpur, that 109 lb. was the average of this large number. Therefore, we may accept 110 lb., with Dr. Lewis, as a liberal average weight for the prisoners whose dietaries are here being considered. At the same time, Dr. Lewis, taking from 140 lb. to 160 lb. as the average weight of Englishmen of all classes, took 145 lb. to represent the average weight of convicts in English prisons. When, therefore, the above gaol diet scales are compared with European standards this important difference in body weight must be remembered. Remembering this fact, let us take the highest scale of diet in use for long-term prisoners in English convict prisons and compare and adapt this to the proportionate requirements of an Indian prisoner. Dr. Burney Yeo, in his valuable manual on "Food in Health and Disease," quotes from the Eleventh Report of the English Prison Commissioners the following diet for long-term, hard-labour prisoners:—

TABLE III.

—	Albuminoids(N×6·3)	Fat.	Carbohydrates.	Salts.	Nitrogen	Carbon.
	oz.	oz.	oz.	oz.	gr.	gr.
English convict prison diet; Class IV.; men with long terms; hard labouring ...	4·09	1·30	20·17	1·55	262	5599

Comparing this with the gaol diets given above it is seen that there is very little difference. Yet this diet scale for men of 145 lb. average weight has been associated with a very high degree of health among English prisoners. Let us adapt this diet by a simple rule of three to the proportionate requirements of Indian prisoners of 110 lb. average weight. It works out as follows:—

TABLE IV.

—	Albuminoids(N×6·3)	Fats.	Carbohydrates.	Salts.	Nitrogen.	Carbon.
	oz.	oz.	oz.	oz.	gr.	gr.
Class IV., English convict diet, adapted to Indian prisoner of 110 lb. weight, average	3·10	0·98	15·3	1·1	199	4·213

Compare, then, this adapted diet with the Bengal and Behar scale values given in Tables I. and II. above, and it will be seen that our gaol diets are superior in every particular. The carbohydrates and albuminoids are especially superior in the Indian gaol diets. If we consider the amount of nitrogen given in the above Table III., which is considered to be sufficient for men of 145 lb. it will be seen that the amount of nitrogen contained in the ordinary Bengal diet (Table I.) should suffice for men of from 133 lb. to 157 lb. weight, and the ordinary Behar scale diets (Table II.) for men of from 157 lb. to 180 lb., whereas we have seen the average weight of these prisoners is only 110 lb., and men of over 150 lb. are very seldom seen in Bengal gaols.

The preceding remarks and figures have shown therefore that, judged by European and scientific standards, after due adjustment to meet the altered conditions of physique, climate, and habits of life, the ordinary diets of Bengal gaols contain in sufficient quantity all the elements of food necessary to maintain vigorous existence on ordinary work. In addition, however, the medical officers of gaols (who are in the great majority of cases also the superintendents or governors) have ample power given to them to make many variations suitable to the season and the general health of the prisoners. These variations are not made so much with the object of increasing the quantities of food supplied as to relieve monotony and give variety to the diets. In addition to

varying the kind of pulse and vegetables issued the medical officer can vary the antiscorbutic pickles used (as lemon, mango, or tamarind), or he can change the morning meal as above described or issue extra antiscorbutic vegetables, as onions and potatoes, or give extra salt and oil. Also, when there is a general falling off in health or at unhealthy seasons the medical officer is enjoined to issue meat, fish, or milk in lieu of part of the pulse in the above diets, and Rule 106 of the gaol code directs that the fish or milk be issued in lieu of part of the pulse in quantities of equal nutritive value. I have calculated the nutritive value of meat, fish, milk, and pulse to be as follows: one part pulse equals two parts meat, two parts fish, or four parts milk. The principle of giving the nutritive equivalents in all cases of variations in diets is fully worked out in the revised gaol code which is now being published. Using, then, the above nutritive equivalents the value of a diet containing meat, for example, is seen in the following table.

TABLE V.—*Permissive Diets.*

—	Albuminoids ($N \times 6{\cdot}3$)	Fats.	Carbohydrates.	Salts.	Nitrogen.	Carbon.
Bengal scale:	oz.	oz.	oz.	oz.	gr.	gr.
Rice, pulse, &c. (meat in lieu of part pulse)	3·65	1·17	25·3	1·13	258	5673
Rice, pulse, &c. (meat in lieu of part pulse; grain for morning meal)	3·71	1·19	23·7	1·18	290	5677
Behar scale:						
Rice, pulse, and wheat (meat in lieu of part pulse)	4·22	1·24	23·9	1·25	299	5853
Rice, pulse, and wheat (meat in lieu of part pulse; grain for morning meal)	4·68	1·26	22·37	1·20	333	5677

The above table might be indefinitely increased if we considered the values of diets containing maize, millet, or if we gave those substituting fish, milk, &c., for part of the pulse, but the values are practically the same. It will, therefore, I think, be agreed that the strictures lately levelled at the dietaries of the gaols in the province of Bengal are without foundation in fact, that the ordinary diets are liberal for ordinary conditions of health, and that ample power has been given to medical officers to vary to a very considerable extent the diets to meet the requirements of sickness or a general lowering of the prisoner's health. It has been laid down as an axiom of English prison management that the diet of prisoners should be "sufficient, and not more than sufficient," to maintain them in health and strength. I think it will be agreed that the Bengal gaol diets are even more liberal than this. These gaol diet scales have been in force since the year 1881; it cannot, therefore, be considered that they are answerable for the comparative unhealthiness of some gaols in the province. The gaol death-rate for the whole province for many years past has shown a decline upon the whole continuous and satisfactory. In 1895 it will be found to have reached the lowest on record (about 25 per mille). This very satisfactory result is not claimed as a result of the diets, but is due to the great care and attention bestowed upon sanitation, clothing, housing, and the provision of a good water-supply for the prisoners. If it is objected that though the scales above discussed are admittedly ample and even liberal, yet the prisoners do not get the full quantities ordered for them, the reply may be made that first it is the primary interest of the medical superintendent to have as low a sick- and death-rate as possible, and secondly, year by year it is proved that the vast majority of prisoners either remain stationary or gain in weight—e.g., take Statement B of the Annual Administration Reports on Bengal Gaols. Here it is shown from year to year that no less than 80 per cent. of the prisoners discharged have either not lost or have gained in weight during their stay in gaol, leaving only 20 per cent. who have lost, the latter number being easily accounted for by sickness. In conclusion, I think it has been shown that the gaol diets in ordinary use are sufficient and ample and that due discretion has been allowed to medical officers to alter or vary the diets according as they may consider necessary. The foregoing report has been submitted to, and has the approval of, the Government of Bengal.

Central Gaol, Bhagalpur.

A Mirror
OF
HOSPITAL PRACTICE,
BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De sed. et Caus. Morb.*, lib. iv. Proœmium.

ST. GEORGE'S HOSPITAL.

TWO CASES OF ACUTE PEMPHIGUS TREATED BY ARSENIC, WITH AN ACCOUNT OF SOME BACTERIOLOGICAL EXPERIMENTS.

(Under the care of Dr. THOMAS WHIPHAM.)

THE following two cases of acute pemphigus have lately been under observation in St. George's Hospital. Both were of unusual severity; one patient recovered and the other died. Both were treated by increasing doses of arsenic, and in both the remarkable effects of the drug in this particular disease were strikingly illustrated. This contribution to the literature of pemphigus is also a valuable one in many other respects. The account of the bacteriological examination of the cases is very complete and adds considerably to our knowledge. We refer our readers to the remarks appended to the case for much interesting information.

CASE 1.—A married woman thirty-eight years of age was admitted into St. George's Hospital on Nov. 21st, 1895. Her family history was good. She had been married ten years, but had never been pregnant. She was liable to sore-throat occasionally, but the attacks were of short duration and not severe. In the previous year she had "a touch of rheumatism," but there was no history or evidence of syphilis. A week before she came under observation a spot appeared on one of her fingers, which she "broke" and afterwards washed some clothes, using ordinary washing soda in the process. Immediately on this followed a copious eruption of "spots" on the face, then on the body, hands, arms, and legs. Her husband was in work and she suffered no privations, her diet consisting daily of bread, butter, meat, and vegetables. The sanitary arrangements of the house in which she lived were, so far as she knew, good. Up to the time when the first spot appeared on her finger she had been in good health. The eruption on the skin had become rapidly worse during the week, and on her admission to hospital she was in the most pitiable condition. She was extremely ill, with a very feeble pulse and a high temperature (101° F.). Her face presented a shocking appearance; it was covered with bullæ, many of which had become confluent and had burst, leaving much of the skin of the face, and of the eyelids especially, covered with masses of dried incrustation, which was black from previous extravasation of blood. There were bullæ, very numerous, on the arms, hands, and legs answering in all respects to those of pemphigus, some with opaque white contents and others with reddish contents. The front of the body, the back, the buttocks, and the vulva were in a most unusual condition. It was evident that the bullæ on the body had been very numerous, that they had become confluent, and that the epidermis had given way, leaving the true skin exposed. This was especially the case on the back and buttocks, the whole surface having become one large sore. There was a copious bullous eruption on the arms, the front of the body, and the back of the neck. The stench emitted by the exposed cutis was most offensive. The eyelids were so swollen and covered with black incrustations that the patient was unable to open them. Her state was one of the utmost gravity and at the time of her admission appeared hopeless. She was at once carefully placed in a warm boric acid bath, by which means the exposed surface of the skin was cleared and the stench arising from it destroyed, while the eyelids were bathed freely with warm boric acid solution. On her removal from the bath she was wrapped in cloths soaked in a 10 per cent. solution of boroglyceride. She was ordered as much milk and strong beef-tea as she could take, with two eggs beaten up and ten ounces

of port wine. A mixture of quininæ hydrochloras (five grains) and liquor arsenici hydrochloridi (five minims) was ordered three times daily. Under this treatment the patient's condition greatly improved, and two days later dressings soaked with olive oil were substituted for those steeped in the boro-glyceride solution. By this time all offensive odour from the skin had been removed. The patient was, however, still extremely weak; her pulse was 120 and her temperature on Nov. 24th reached 103·2°. Between Nov. 21st and 23rd a few fresh bullæ had formed on various parts of her skin, excepting on her face. Her tongue, which had never since her admission been very thickly coated, was dry and the fur was of a dirty-white colour. On the 25th, although a few fresh bullæ had made their appearance on the wrists and over the left hip, the skin on the back had begun to heal and the patient's expression of face had improved. The dose of the liquor arsenici was increased to seven minims and fish was added to the diet. On the 26th she was still very weak and the tedious process of dressing her body and limbs exhausted her greatly. Her pulse was weak; she slept badly, but took nourishment well. Five ounces of brandy were ordered instead of the port wine. On the 28th she was extremely weak and diarrhœa had set in. Two scruples of the aromatic powder of chalk and opium were given in place of the midday dose of the mixture and the diarrhœa ceased. The dose of arsenic was increased by two minims. The temperature, which up to this date had been irregular, reaching on one occasion 103·2°, now became more regular and ranged between 101° and normal during the next three weeks, after which it fell to normal, the pulse-rate during the same period averaging about 110. On the 29th decided improvement had taken place, and the extensive ulcerated areæ on the back and buttocks and the smaller ones on other parts of the body showed distinctly the commencement of the healing process; the tongue was cleaner and she slept better. On the 30th the dose of liquor arsenici was increased to twelve minims. Pounded meat was ordered in place of the fish diet, and the brandy was replaced by ten ounces of port wine on Dec. 4th. The process of healing was proceeding rapidly, the new skin appearing as islets in different parts of the ulcerated surfaces, and on the 7th the skin of the back, which on admission was one large ulcerated surface, was practically healed. On the 9th the patient vomited after breakfast, and a small boil had formed on the right forearm and on the left knee and a "stye" on the left lower eyelid. On the supposition that these complications might be the effect of a too liberal diet it was decided to substitute fish for the meat rather than discontinue the arsenic; the change was productive of the desired result so far as any fresh formation of boils was concerned, although both of the boils suppurated and required incision. On the 12th further improvement had taken place; the skin over the buttocks was rapidly healing, all the other parts which had been the seat of ulceration being now quite sound. The new skin was deeply pigmented. On the 17th a trace of albumin was found for the first and only time in the urine, which had varied in specific gravity from 1014 to 1020. From this date the patient made rapid progress, gained strength and flesh, slept well, and retained her appetite for food. On the 30th it was noted that a small area on the outer side of the left buttock, another on its inner side, and a larger area on the right buttock remained unhealed; but on all of them there were islets of new skin. On Jan. 3rd, 1896, the healing had so far advanced that the only ulceration which remained was on the right buttock, to which unguentum zinci was applied. Recovery was now uninterrupted and the patient left on the 29th for the Atkinson Morley Convalescent Hospital with only a small unhealed surface on the right buttock.

CASE 2.—A boy two years of age was admitted into St. George's Hospital on Christmas-eve, 1895. He was one of four healthy children, one (a twin) having died from an injury at his birth. The family history was good; there was no history of syphilis in either parent or rheumatic history, and up to the date of the disease for which he came under treatment the child had not been ill. About five weeks previously to his admission a cat had scratched the palm of his left hand and had caused a wound which became so bad that a linseed poultice was applied to it and subsequently an ointment. When admitted to hospital the wound on the palm of the hand had quite recently healed and some dry flakes of dead skin were still adherent around the cicatrix. Three days before he came under observation in Crayle Ward he had been brought to Dr. Rolleston as an out-patient to be treated for an eruption on his legs which in some respects resembled impetigo. The eruption increased and the mother again brought him to the hospital. On examination of the child there was found a copious eruption of pemphigus, the hands, feet, thighs, ankles, and calves being most affected. The child was very ill, with a temperature of 101° F. and a pulse of about 140; the urine was natural. There was no evidence of visceral or other disease. The treatment at once adopted was liquor arsenicalis in minim doses three times daily. The affected skin was carefully washed with a 10 per cent. solution of boro-glyceride, and subsequently enveloped in dressings soaked with olive oil. The diet consisted of milk, beef-tea, and boiled custard. On Dec. 26th some fresh bullæ had made their appearance in front of the left ankle, and the contents of one large one on the outside of the ball of the left thumb had become turbid. On the 27th there were fresh bullæ on both thighs, one on the outer side of the left forearm and a few over the pubes; the older ones were desiccating. On the 28th two fresh bullæ had formed on the right knee (the inner side) and two on the outer side of the left knee. The dose of liquor arsenicalis was increased to two minims. On the 29th there were seen one or two fresh bullæ scattered about the extremities. On the 30th there occurred still further development of the eruption over the pubes, the left knee, and the thigh. Some of the bullæ on the palm of the right hand had burst, and many of those in other situations had turbid contents. The dose of liquor arsenicalis had by this time been increased to five minims three times daily, but in spite of this large dose a few fresh bullæ had appeared. On the 31st the child was restless and vomited three times after food; only a few fresh bullæ had formed. It was thought that the vomiting might be due to the arsenic. Parrish's chemical food was therefore substituted for it, with the result that on Jan. 3rd, 1896, thirty fresh bullæ had formed on one leg and fifty on the other. The gastric disturbance had passed off and the arsenic was resumed on the 4th in three-minim doses three times daily. After this the rapid formation of bullæ gradually ceased, and from the 9th to the 16th there was no increase in the eruption. On the 6th and 8th the child was placed for ten minutes in a bath containing boric acid, with the view of disinfecting the bases of such bullæ as had burst. On the 7th vomiting recurred once after food, but the child had greatly improved in spirits and appearance. With the exception of recurrence of the vomiting on the 12th and 13th progress was very satisfactory till the 16th, when he became irritable and restless, but was much more comfortable after another boric acid bath and a dose of grey powder. All went well and the skin was fast approaching a healthy condition until the 19th, when a large bulla formed on the back of the left hand. The child's diet had been gradually increased by the addition of pounded meat, eggs, custard, milk, and pounded chicken, according to his appetite. On the 27th the child was fretful and his appetite failed; it was with difficulty that he could be persuaded to take any food. Two days later there formed over the external malleolus of the right ankle a large bleb which burst and was dressed antiseptically. On Feb. 1st the portion of skin on which the bleb was began to slough. The child had become seriously ill, rapidly failed in strength, and died on the 11th. The treatment was chiefly by arsenic, and at the last the liquor arsenicalis was given in Parrish's food.

BACTERIOLOGICAL EXAMINATION BY DR. S. RUSSELL WELLS.

Dr. C. Slater being absent from London the bacteriological examination of Case 2 was undertaken by Dr. Wells and conducted in the bacteriological laboratories of St. George's Hospital and the British Institute of Preventive Medicine. A diplococcus has been described as occurring in cases of acute pemphigus by Demme,[1] and Claessen,[2] and recently in this country by Bulloch,[3] while Dähnhardt[4] found a similar organism in a case of chronic pemphigus. Almquist,[5] also, from his investigations considers a coccus that forms a yellow growth on culture media to have been the cause of an epidemic of pemphigus in young children. It was therefore thought advisable to investigate the bacteriology of this case, so on Dec. 24th, 1895, agar, gelatin, and bouillon tubes were inoculated, with due antiseptic

[1] Verhandlungen des Congress für Innere Medicin, Wiesbaden, 1886.
[2] Berliner Klinische Wochenschrift, 1893, p. 671.
[3] British Journal of Dermatology, 1896, p. 189.
[4] Deutsche Medicinische Wochenschrift, 1887, vol. xiii., p. 711.
[5] Zeitschrift für Hygiene, Band x., 1891, p. 253.

precautions, from the contents of the bullæ on the child's legs, a separate bulla with clear contents being used for each tube. The bouillon and agar tubes were left in the incubator at 37° C., and next day in three out of the four tubes used a growth was found. The gelatin tubes which were left at a lower temperature showed no growth. From the agar and bouillon cultures agar and gelatin plate cultures were made: the gelatin plates were found to be most unsuitable, as the organisms grew so very slowly on this medium at the lower temperature necessary for the gelatin. From the agar plates the three following distinct organisms were separated: 1. A sarcina which presented all the characteristics as to appearances, growth, and staining reactions of sarcina lutea. As this organism is well known to frequent the human skin, and as subsequent experiments showed the sarcina was found to be harmless for guinea-pigs, it was considered to be simply a contamination. Its appearances and effects on guinea-pigs were carefully investigated in view of the yellow pemphigus organism described by Almquist. 2. A small sarcina which formed tiny, almost transparent colonies on agar and grew very slowly. This organism was found to have no effect on guinea-pigs and was also considered to be a contamination. 3. A coccus usually found arranged as a diplococcus. This organism was probably the same as that found by Demme, Claessen, and Bulloch in cases of acute pemphigus. The first two organisms may probably be disregarded, but it will be necessary to describe the diplococcus at length. Cover-glass preparations were made from the contents of the bullæ direct, and showed, on staining with methylene blue, gentian violet, and other like dyes, a few diplococci which presented all the appearances (described below) of the diplococci isolated from the serum of the bullæ. The blood and urine of the patient were not examined and no more tubes were inoculated, as shortly after the cultures were made most of the bullæ broke and were treated with olive oil, so the child's legs, on this account, and from the fact that he passed his urine in the bed, could not be rendered even approximately aseptic.

Necropsy.—The child died on Feb. 11th and the necropsy was made twenty-four hours after death by Dr. Cyril Ogle. His report in the post-mortem book of St. George's Hospital is as follows. "There were no signs of rickets. The body was well nourished. A great deal of superficial scarring was present, chiefly on the legs and the inner side of the thighs. Besides the worm-eaten appearance produced by the scars there was a decided increase of pigment of the skin. Just below the ankle was a large sloughy ulcer covered with iodoform. The body was very anæmic and sallow, but not œdematous. Rigor mortis was present. The height was 2 ft. 6 in. The blood was more fluid than in health. The pleural cavities contained a few ounces of blood-tinged serum. The right lung weighed five ounces and the left four and a half ounces. Throughout the substance of both lungs were numerous small hæmorrhages of about the size of hemp seeds, impalpable, evenly distributed, and where they abutted on the surface there was no pleuritis. The rest of the lung was healthy but somewhat distended; there was no broncho-pneumonia. The tubes were not choked. The pulmonary artery contained a little post-mortem clot. No thymus gland was observed. The heart weighed four ounces. There was no engorgement of the right side. The valves were all sound. There was a somewhat hypertrophied right ventricle with a little dilatation. The foramen ovale was closed. No staining of the endocardium or aorta was seen. There were no hæmorrhages on the surface of the heart. The peritoneal cavity contained about one and a half ounces of clear serum. The liver weighed seventeen ounces and was firm and healthy. The stomach contained much curdled milk in solid lumps. There was no evidence of any gastritis. The pancreas was normal. The spleen weighed one and a half ounces and was firm. The kidneys each weighed two ounces and were pale and healthy; no petechiæ were present. The adrenals were healthy. The mucous membrane of the bladder was spotted with fine hæmorrhages; there was no cystitis. The testes were in the scrotum, which was œdematous. There was no œdema of the legs. The intestines were quite healthy: the mesenteric glands were not enlarged. The brain weighed forty-two ounces; no softening, no distension of the ventricles, no meningitis, and no blocking of the veins were present; the substance was healthy and firm, and there were no petechiæ." Microscopical sections were made of the lungs and stained by Czinzinski's method with eosin and methylene blue, when it was found that there were small extravasations of blood into the alveoli, and in the neighbourhood of these hæmorrhages a few diplococci were found similar to those described below. No other micro-organism could be detected in the sections.

Bacteriological experiments.—The organism, as seen in pure cultures, was a micrococcus of about 0·8 to 1·5 μ in diameter: single cocci were seen, and very short chains of three or four cocci; but by far the commonest arrangement was in pairs, and that this was the natural arrangement was shown by the fact that nearly all those found in the tissues and blood of inoculated animals, and in the fluid of the bullæ, as well as the vast majority in bouillon cultures, examined by the hanging-drop method, were diplococci. The opposed sides of the two cocci were somewhat flattened, so they appeared slightly wider than they were long. No capsule like that of the pneumococcus could be detected. They stained readily with methylene blue, gentian violet, and also by Gram's method. On agar plates the diplococci grew rapidly at 37° C. Well-marked colonies often appeared in twenty-four hours; these had at first a circular outline, slightly raised in the centre, and of a milk-white colour. If kept at 37° C. and prevented from drying these circular colonies increased in size for about a week without changing their form: after this they commenced to throw out slight projections at the edge, so that a colony from ten days to a fortnight old had a rosette appearance, behaving in the same manner as the diplococcus described by Demme. As the age of the colonies advanced they sometimes took on a slight yellowish tinge, changing from a milk-white to a cream colour. The diplococci grew very quickly on agar at 37° C. both as streak and stab cultures, in the latter case in the well-known nail-like form. As a rule there was a copious growth resembling a streak of rather thin white oil paint along the course of the needle in twenty-four hours. At 22° C. the growth on agar took place, but was very slow. On gelatin at 22° C. the growth was extremely slow and feeble, being far slower than on agar at the same temperature; but when the gelatin was liquefied and kept at 37° C. the diplococci grew fairly well, and when, after having been started for twenty-four hours at 37° C., the tubes were allowed to cool so as to set the gelatin and then placed at 22° C. the gelatin was slowly liquefied after several days. It may be mentioned here that gelatin appeared to be one of the worst soils on which to grow the organism; it grew better on almost any other medium at the same temperature. On blood serum the diplococci grew as on agar. In bouillon they grew very rapidly at 37° C., giving rise first to a turbidity and then to a white sediment; in some cases a pellicle formed, but this soon sank to the bottom of the tube. The organisms grew in bouillon at 22° C., but much less rapidly. On potato they formed a whitish, semi-transparent pellicle. Milk was curdled slowly at 37° C. Anaerobic cultures were tried on agar (sloping and stab), bouillon, and potato, and in all cases there was growth at 37° C., but not so rapid as under aerobic conditions, and the colonies were smaller and less dense. Mice and guinea-pigs were subcutaneously inoculated with small quantities of young pure bouillon cultures of the organism, and other mice and guinea-pigs were "vaccinated" with young pure agar cultures. The *modus operandi* in the latter case was to shave a small area of the skin of the animal's abdomen and then to wash the place with strong carbolic acid solution and dry with sterile cotton wool; next to scarify the skin with a sharp sterile scalpel and to rub in a small quantity of the culture with a sterile platinum wire; and after this the place was protected by dry sterile cotton wool and collodion. All the animals inoculated or "vaccinated" with the organism died in from four to eight days, and the diplococcus was recovered as a pure culture from the heart's blood in each case. In the case of the mice, cover-glass preparations made from the heart's blood showed large numbers of diplococci; in the blood of the guinea-pigs only a few were found, but no other micro-organism was present. The only post-mortem appearances of importance were slight enlargement of the suprarenal capsules and very fine hæmorrhages in the lungs of a similar character to those found in the lungs of the child. In these patches a few diplococci were found. No bullæ were produced.

Summary.—From the above it will be seen that the following points have been established: (1) that a diplococcus answering in every respect to that found by Demme, Claessen, and Bulloch was found in the contents of the bullæ of the child during life; (2) that this diplococcus was

grown from the contents of the bullæ and obtained as a pure culture outside the body; (3) that after the death of the child a similar organism was found in the lungs and minute hæmorrhages were found in the alveoli; (4) that pure cultures of the diplococci, after having been grown for many generations outside the body, when introduced into the system of either guinea-pigs or mice by hypodermic injection or "vaccination" caused death; (5) that after death the diplococci were grown as pure cultures from the blood of these animals, and that these cultures killed other animals; (6) that the appearances found in the lungs of these animals were comparable to those found in the child's lungs; and (7) that the diplococcus was found in sections of the lungs of the animals. The following conclusions have been drawn. Since bullæ have not been produced in the animals we cannot say that the diplococci found were the cause of the disease, but as this organism has now been found by four independent observers in cases of acute pemphigus, we think, in the light of our results, that there is a strong presumption in favour of this being the case. Demme only obtained pneumonic patches by injecting the organism into the lungs of guinea-pigs, so our results with subcutaneous injections carry the matter a stage further. It is interesting to note that Sahli has described a case in which pemphigus followed broncho-pneumonia. It is possible that the difference in the texture and structure of the skin in the human being and the guinea-pig may account for the absence of eruption in the latter case. We have to thank Dr. Hewlett for performing the injections and "vaccinations" for us, and Dr. Macfadyen and Dr. Slater for the use of their laboratories.

Remarks by Dr. WHIPHAM.—If only on the ground of the great severity of the disease these two cases would have been interesting. The bacteriological observations, and one or two other points which seem worthy of note, render them, perhaps, sufficiently important to merit publication. In Case 1 the extent of the eruption and the great damage to the skin, which was its consequence, are exceptional even in acute pemphigus. On admission almost the whole of the skin of the back, the whole of the skin of the right buttock and of the lower half of the left of the labia majora, and of the back and inner surface of the right arm was extensively and deeply ulcerated after the confluence of the eruption. Equally remarkable is the recovery of a person from so severe a lesion to an organ so important as the skin, the patient being at the time in a condition of such extreme debility and prostration that there seemed to be but one possible termination to the case. The treatment by arsenic was adopted in both cases, and the improvement, which in either case followed immediately upon its administration, goes to prove the accuracy of the observations made some years since by Mr. Hutchinson. A change for the better occurred in the case of the woman within forty-eight hours of her taking the first dose of the arsenic. In the case of the child the formation of the bullæ was very greatly checked in about the same time, and on the sixth day from his admission only one or two fresh bullæ had formed in the previous twenty-four hours. It will be seen in the report of the case that on Dec. 31st (the seventh day from his admission) the child was restless and vomited, and that in consequence the arsenic was withheld, with the result that during the next twenty-four hours thirty fresh bullæ had formed on one leg and fifty on the other. The gastric disturbance having subsided in the course of three days the arsenic was resumed and the development of the eruption was again checked. It is difficult to resist the conviction that we had here an instance of cause and effect. These two cases will add to a very interesting series collected by Mr. George Pernet in a paper which he read in the Section of Dermatology at the annual meeting of the British Medical Association in July, 1895. Mr. Pernet's cases showed that in a very large proportion of them acute pemphigus had followed an injury or wound of the skin. In our cases the woman had a spot on her finger, which she rubbed, then washed some clothes, and, as she described it, "poisoned the place." This possible infection occurred one week before the onset of the pemphigus. The child was scratched by a cat five weeks before he was received into hospital, and the wound had been so bad in the interval that it had barely healed at that date. The probability is that, as Mr. Pernet suggests, a micro-organism was introduced by the injury in each case, and the suggestion derives much support from Dr. Russell Wells's careful bacteriological experiments.

Medical Societies.

ROYAL MEDICAL AND CHIRURGICAL SOCIETY.

Spontaneous Dislocation of the Hip, with some Remarks on a Class of Case often mistaken for Rheumatism.—A Method of obtaining a complete Skin Covering after Ablation of the Breast.—The Transplantation of Skin Flaps for the Filling up of considerable Defects after Amputation of the Breast.

AN ordinary meeting of this society was held on April 28th, the President, Dr. DICKINSON, being in the chair.

Mr. BARWELL read a paper on Spontaneous Dislocation of the Hip, with some Remarks on a Class of Case often mistaken for Rheumatism. The patient was a naval officer who, on account of an obscure affection of the hip, had been sent from St. Leonards by Dr. Fennings for Mr. Barwell's opinion. He had served for the last three years in Chinese waters and during the homeward voyage was greatly troubled with boils; these culminated in erysipelas of the face while he was passing through the Red Sea. He was landed at Malta and went into hospital, where several sores and some abscesses formed about the face, accompanied with high temperature. One night he was attacked with severe pain in the right hip and thigh, and when he left his bed he was very lame. This pain was ascribed to sciatica and was treated accordingly. He came under Dr. Fennings's care on Oct. 8th still suffering from pain and lameness, his temperature ranging to about 100° F. A striking feature in the case was that the pain was felt in the anterior crural nerves as much as in the sciatic nerve. Mr. Barwell, on first seeing him, noticed the peculiar and uneven step indicative of hip mischief: as the patient stood on the left foot he placed the right one a good deal in front, keeping the knee bent and the body bowed; when standing on the right foot the other heel did not reach the ground by a considerable distance; and the prominence of the trochanter was absent from its normal place. Dislocation of the head of the femur being diagnosed, it was decided to make an attempt to reduce the deformity by Bigelow's method. This was successfully accomplished under full anæsthesia. When internal rotation and adduction had been carried pretty far the head of the bone re-entered the acetabulum with an audible and perceptible snap. The limbs then became of the same length. Three days later the patient walked without any limp; all his pain had disappeared. On Feb. 22nd, 1896, he walked perfectly straight and without limp. Occasionally he had a little vague pain in the upper third of the outside of the thigh. He had been examined at the Admiralty and passed again to active service.—Dr. JOHN HARLEY referred to the case of a young woman who was admitted to St. Thomas's Hospital under his care with acute rheumatism. The disease concentrated itself in the right shoulder-joint, giving rise to swelling and obscure fluctuation there. Later spontaneous dislocation of the shoulder-joint occurred. It was easily reduced, the arm bound up to the side, and the elbow supported. The result was a good recovery. Such a case showed that surgeons should not too quickly interfere in cases of joint affection which might get well of themselves if left alone. In some cases of pyæmia complete absorption of pus from joints might occur.—Dr. NORMAN MOORE said he wished for more information regarding dislocation of the hip-joint in cases of enteric fever. He had read all the post-mortem accounts at St. Bartholomew's Hospital since the year 1867 and no case had been met with, neither had he seen the condition in the wards. He asked if the cases Mr. Barwell had referred to occurred in children or adults, and whether the diagnosis of enteric fever was beyond question, for the recognition of typhoid fever was often by no means certain.—Mr. BARWELL, in reply, said that the case quoted by Dr. Harley was not analogous, for it was a suppurative affection. He had seen three cases of dislocation of the hip in undoubted enteric fever, and in a fourth case there was strong reason to believe that the disease was typhoid fever. In one case, in a girl aged nine years, he attempted reduction two years after the dislocation, but failed. In the case of a girl aged sixteen, in which the diagnosis was confirmed by Murchison, he attempted reduction about four months after dislocation, but failed. In this class of case there was no

sign of inflammation in the joint, but the bone slipped on to the dorsum ilii from a healthy socket. The vague pains about the limbs in these cases were not rheumatic, but due to the absorption of some poison.

Mr. MAYO ROBSON read a paper on a Method of obtaining a Complete Skin Covering after Ablation of the Breast. He remarked that in complete ablation of the breast and of the skin covering it a difficulty frequently arose when the effort was made to obtain a skin covering, this being as a rule impossible without further operative treatment. So far as he could ascertain the general practice among surgeons had been to draw the parts together as far as possible and then to leave the remainder to granulate or to cover the remaining surface by Thiersch's skin grafts, the former being a tedious and the latter an uncertain and not always successful method. He showed that by means of one or two single incisions with sliding of the flaps, the whole of a very extensive wound might be closed, and that primary union might thus be secured. Although some tension was necessarily present the observance of antiseptic precautions had prevented sloughing, and in a number of cases on which he had operated he had not experienced any trouble. He concluded his remarks by saying that he believed it would be found that the adoption of the method portrayed, or some modification of it which would carry out the principle of completely re-covering the large wound surface, would not only render these extensive operations less formidable by shortening the convalescence, but would tend to greater thoroughness, as it would also enable surgeons to operate on cases otherwise hopeless. The paper was illustrated by photographs of cases and by diagrams.

Mr. BUTLIN, with whom was associated Mr. BEADON ADAMS, read a paper on the Transplantation of Skin Flaps for the filling up of Considerable Defects after Amputation of the Breast. In cases in which it was necessary to remove large areas of the integument in operations for cancer of the breast, rapid healing of the wound and subsequent contraction might often be prevented by transplantation of flaps of skin in the immediate neighbourhood of the wound. He had employed this method in fifteen or more cases and had generally employed the method of transplantation by rotation. The flaps should not be more than three and a half or four inches in length. They should have large bases. Flaps were more easily procured on the lower margin of the wound. Asepsis was not the only condition necessary to ensure the vitality of the flaps. The best cases for transplantation and the best scheme of transplantation for the majority of cases were discussed. Mr. Butlin had found that tension on the flaps was of comparatively small importance in determining sloughing.—Mr. W. G. SPENCER said that for nearly all cases in which there was not enough covering after removal of the breast the lower flap should be undermined to a much greater extent than was commonly done. The undermining could be carried down to the lower ribs and behind to the angle of the scapula. This not only gave an extraordinary amount of room, but in this way ulceration of a flap was avoided from the twisting of its pedicle. The undermined flap might if necessary be button-holed at its lower portion to prevent accumulation of blood.—Mr. WATSON CHEYNE said that he was able to confirm the last speaker's observations. He always removed a large amount of skin in amputation of the breast—all that which lay over the prominence of the breast. At first in these cases he performed skin-grafting, but afterwards he found that undermining was a better procedure. He carried this out in all directions, quite up to the neck and down to the abdominal muscles, and he drew the edges together with stout silver wire passed at a distance of about an inch from the edges of the flaps. The only condition necessary to enable this manœuvre to be carried out was that the wound should be oval. The stitches of relaxation would sometimes cut through, but this made no material difference to the result. In about 10 per cent. of the cases in which stitching together by these means could not be done he had employed flaps and skin-grafting. An objection to the operation by flaps was that the patient was already often collapsed after an extensive dissection of the region of the breast, and the plastic proceeding certainly added considerably to the length of the operation. In such cases, where collapse was present, he stitched the wound together as much as possible, and then in three or four days skin-grafted the remainder of the wound. Cases treated in this manner did very well indeed, and he had very few failures after skin-grafting.—Mr. WALLIS remarked that in plastic operations about the face he had seen the flaps become very congested and threaten to slough, but this had been prevented by multiple pricking of the flap. The objection to the application of this method to the breast was that it involved the exposure of the wound.—Mr. BARWELL said that he was in the habit of using large lead button sutures where the tension was greatest, and he frequently relieved the stretching by making incisions parallel to the wound edge and then sewing these latter up in a direction at right angles to the wound edge. As he believed that the resistance was chiefly in the subcutaneous tissue he was careful to divide any prominent fibrous bands that presented themselves.—Mr. BOWLBY said that the patients appeared to suffer more pain when the flaps were dragged together and that the patient was more hidebound with the dragging than with the flap method. Cases in which the tumour extended towards the clavicle or towards the sternum were more suitable for flaps, while the wounds extending towards the axilla came together better by dragging.—Mr. MAYO ROBSON, in reply, said that it was only in the exceptional cases that he used the flap method, and he agreed that in all cases undermining and dragging were better where possible, taking care that in all cases where dragging was resorted to the stitches should be placed well away from the edge of the wound. In his flaps he took the whole thickness of the tissue, and he had done it in stout people as well as thin ones without producing sloughing. He used no drainage whatever.—Mr. BUTLIN, in reply, said that his flaps appeared to be much like Mr. Mayo Robson's except that in very fat people he thought it better to take skin only. The flap method avoided the necessity of skin-grafting, which was to the patient a second operation. The after-contraction by the flap method was small, and the upper extremity could be moved with ease.

MEDICAL SOCIETY OF LONDON.

Suppurative Affections of the Mammary Gland.

AN ordinary meeting of this society was held on April 27th, Sir JAMES CRICHTON BROWNE, President, being in the chair.

Mr. MARMADUKE SHEILD read a paper on Suppurative Affections of the Mammary Gland. The paper is published in full in another part of our present issue.

Dr. W. S. A. GRIFFITHS said that it was the business of obstetricians to prevent the formation of mammary abscess, and in this they had been very successful, as the statistics of a hospital like Queen Charlotte's would show, where, under suitable treatment by antiseptics and cleanliness, the affection had almost disappeared. Abscess of the breast was usually associated with some structural lesion of the surface rather than with an affection of the ducts, and for this reason all erosions of the nipple in suckling women should be treated with rest and antiseptics. The new point in Mr. Sheild's method of treatment was to close the original incision and carry on the drainage from the dependent point only. He was under the impression, though he was not prepared to quote his authority, that recent researches tended to show that the breast was not to be regarded as a specialised sebaceous gland.

Mr. F. C. WALLIS said that in acute mammary abscess occurring during lactation he adopted the method of scraping out with the blunt spoon and then thoroughly mopping out with dabs of perchloride of mercury. The hour-glass shaped abscess was not commonly recognised, and this certainly explained the tardy recovery of some cases after incision.

Mr. W. M. ECCLES asked if Mr. Sheild had met with gumma of the mammary gland. He had recently seen a case in which, under iodide of potassium internally and scraping locally, rapid healing had followed. He inquired what treatment was to be adopted in cases of chronic sinus after mammary abscess. The early recognition of pus was extremely important, and he asked Mr. Sheild's views upon the best way to discover pus in the deeper portions of the gland. In cases of mammary abscess a general anæsthetic should be given in order to permit of thorough exploration and treatment.

Dr. A. ROUTH desired to emphasise the importance of preventive treatment in these cases. Some years ago he was in medical charge of an establishment in which many primiparæ were confined, and there mammary abscess was

common owing to careless nursing. He then adopted the method of washing the nipple with a weak solution of sulphurous acid (1 in 10) after suckling, the nipple being again washed before the infant was put to it. With regard to the occurrence of diarrhœa and vomiting in children, in some such cases he had found the milk in the superficial part of the breast ducts to be teeming with micro-organisms. To prevent the diarrhœa it was necessary to draw off the first part of the milk with the breast pump and then put the child to the breast. Pressure of a breast bandage upon the nipple might tend to produce mammary abscess.

The PRESIDENT remarked that he had often seen puerperal mania of an acute type associated with abscess of the breast. This might be due either to traumatism or be a part of a general septic process.

Mr. SHEILD, in reply, maintained that though those present might be in the habit of treating mammary abscess by a dependent incision, yet that habit was not generally followed by those in general practice, nor was it advocated in the text-books. Gummata of the breast as a rule did not break down into abscess, but rather tended to form sloughs; he had notes of four such cases. In the treatment of chronic sinus of the breast he advocated thorough scraping, with fixation of the arm to the side, and if that failed the excision of a wedge-shaped portion of the mamma, together with the sinus as well. In the case of an inflamed breast where there was elasticity with œdema of the skin he would examine under a general anæsthetic rather than wait for fluctuation. He had only met with notes of one case in association with puerperal mania, but he had not looked up any asylum records.

PATHOLOGICAL SOCIETY OF LONDON.

Discussion on the Anatomical Results of the Radical Cure of Hernia.—Stricture of the Sac of a Femoral Hernia.—Oxalate of Lime Calculi in Pancreatic Cyst.—Chondro-sarcoma of the Humerus following Fracture.—Angina Pectoris with Thrombosis of Basilar Artery.

AN ordinary meeting of this society took place on April 21st, Mr. BUTLIN, President, being in the chair.

The PRESIDENT introduced a discussion on the Anatomical Results of the Radical Cure of Hernia. He said that during the last ten years this operation had become common and many hundreds had now been performed. It was therefore time to begin to look for the actual results of the operation where death had happened some time subsequently, and he hoped that this discussion would be the opening of a pathological aspect of the subject of radical cure of hernia. The patient was a boy three years old who suffered from an inguinal hernia on the right side. The operation was performed on May 29th, 1895. The inguinal canal was exposed through an incision in its long axis, and a thin sac was discovered, which extended down to the tunica vaginalis, but did not open into the cavity of the latter. When the sac was opened clear fluid escaped. This drew attention to the abdomen, from which fluid could be squeezed freely out through the open sac. The surface of the sac was found to be studded with miliary tubercles, and a mass of tuberculous material was dissected away from the back and upper part of the testis. The sac was separated from the surrounding tissues, twisted up as far as the internal ring, transfixed at its neck, tied in two halves with catgut, and the stump was fastened upwards and outwards to the under aspect of the wall of the abdomen. No attempt was made to reconstruct the inguinal canal after Bassini's method. The child made an excellent recovery and the wound healed by the first intention in spite of the presence of tubercle. The abdomen shrank after the operation. In July the boy was attacked with tuberculous disease of the hip, in which an abscess formed. On Dec. 17th he exhibited the first signs of tuberculous meningitis, from which he died in five days. The seat of operation presented the following characters. At the site of the internal abdominal ring, seen from its peritoneal aspect, was a small mass of pigment. There was no pocket or depression, and, indeed, no sign from which it could have been inferred that a hernia had ever existed. The inguinal canal was practically obliterated.

Mr. GOLDING-BIRD showed a Specimen from a man who had died five days after the Radical Cure of Hernia had been performed by Macewen's method. A double interest attached to the case, as not only did the specimen exhibit the thoroughness of the obliteration of the hernial sac and its final position under the general peritoneum near the inner ring, but also it showed that the case had been one of infantile hernia, the scrotal hernia occupying a place in a well-developed mesorchium from which the testis freely depended into the general cavity of the tunica vaginalis. It was known that extreme force had been used to effect reduction before the patient came under observation, and at the necropsy it was discovered that a small knuckle of bowel had been forced through a slit in the neck of the scrotal sac and had become almost gangrenous. At the operation the scrotal portion of the hernia was easily reduced by taxis, the operation of radical cure being at once after this undertaken, but the fact of a small knuckle having previously been forced through the neck of the sac was unknown, and that condition quite unsuspected, hence the fatal result. The collapsed state of the patient after the operation precluded the possibility of further surgical exploration, nor were the symptoms such as to indicate that bowel still remained unreduced. The symptoms pointed to general peritonitis alone.—Mr. EVE said that it did not matter how the neck of the sac was dealt with so long as the peritoneum was well separated up to the abdominal ring; it was certainly unnecessary to dislocate the twisted or ligatured neck of the sac from its usual locality. He regretted that no specimen was shown to exhibit the result of suturing the conjoined tendon to Poupart's ligament. In twenty cases he had employed silkworm gut to fasten the conjoined tendon to Poupart's ligament and in none of them had suppuration ensued.—Mr. JONATHAN HUTCHINSON, jun., said that a few days since he cut down on an old case of hernia in which radical cure had been performed. A sinus remained, and at the bottom of this he had found a silkworm gut suture. There was no doubt that silk, however prepared, sometimes acted as a foreign body and induced irritation; it was therefore advisable to use only kangaroo tendon and catgut, which were easily absorbed. He had intended to show a specimen of radical cure of ventral hernia. Death supervened from heart disease five weeks afterwards. The sac had contained the colon and vermiform appendix; the latter was still adherent to the peritoneal scar. He had dissected another case of radical cure of ventral hernia. The hernia was in the right iliac fossa and developed after laparotomy for intestinal obstruction. He sewed up the peritoneum with a catgut suture, and this he believed favoured absence of adhesions afterwards. He had dissected another case of radical cure of hernia; it was of the inguinal variety and a piece of omentum was used as a plug. This was now usually regarded as not only inadvisable but dangerous, as it courted disaster or, at any rate, troublesome symptoms from the band later.

Mr. JAMES BERRY showed a Specimen illustrating Radical Cure of Inguinal Hernia. The patient was a woman aged fifty years who died in St. Bartholomew's Hospital from perforation of a duodenal ulcer. Two years and three months ago an operation had been performed by Mr. Willett for the radical cure of a labial hernia of moderate size. The sac had been tied with silk and cut away and the pillars of the external ring sutured with the same material. The result was excellent. The peritoneum on the inner aspect of the inguinal canal showed a puckered scar, the canal itself was filled up with fibrous tissue, and the external abdominal ring had been obliterated. There was no bulging of any part of the inguinal region.—Mr. W. ECCLES said that in the President's case the peritoneum lining the abdominal cavity showed but few tubercles, and he wondered if the opening of the peritoneum had benefited the child in any way. He had seen the case where a silkworm gut suture caused so much irritation that it had to be removed. The cause of the frequent trouble following suture in this region was perhaps that the parts were in constant movement. He had noticed that patients who had had a radical cure performed and this had failed, found great difficulty in wearing a truss with as much comfort as formerly. This was due no doubt to the use of stout non-absorbent ligatures.

Dr. MACPHERSON LAWRIE (Weymouth) showed a Stricture of the Sac of a Femoral Hernia. The specimen consisted of the distended sac of a femoral hernia. It was oval in shape and measured an inch and a half in chief diameter. The neck of the sac was surrounded by a thin, hard ring, which was about the size of a No. 12 catheter. Above this ring there was a broad fringe of peritoneum, which formed an incomplete upper compartment. The patient was a female aged twenty-one years. Two and a half years before she felt a lump in the left groin after straining. She did not feel the

lump coming, but simply found it there. Ever since that it had troubled her a good deal. She was always able to push it up, although sometimes with difficulty. The sac was dissected out, pulled down, and ligatured in three parts without opening. On the distal portion being cut away the proximal end slipped into the abdomen.—Mr. TARGETT said that the specimen was an instance of thickening in the wall of the sac opposite to the saphenous opening, and was probably due to irritation at a point of flexion in the sac. This condition was common in inguinal hernia, but he had not seen it before in a femoral sac.

Mr. S. G. SHATTOCK exhibited Microscopic Sections of Calculi of Oxalate of Lime from a Pancreatic Cyst. So far as he knew, the observation of such calculi in connexion with the pancreas was unique. In herbivora intestinal calculi of oxalate of lime were not rare, but the possibility of the cyst in question being of intestinal or renal origin was disposed of. The cyst was found at the operation by Mr. Pitts to arise from the pancreas, and the contents of it converted starch into sugar. Both chemically and microscopically the calculi were of pure oxalate of lime and precisely like certain urinary forms. Sir Alfred Garrod in 1849 had demonstrated the presence of calcium oxalate in the blood of certain gouty patients and more recent evidence went to show that the oxalate of lime in the urine was ingested as such in vegetable food stuffs. Chemists had not as yet, however, investigated the common secretions for the presence of oxalate. It was not fully known what held the salt in solution in urine; in the case now recorded the absorption of certain constituents from the cyst contents was probably the cause of its slow crystallisation. The only observation bearing at all on the subject was that mentioned and confirmed by Virchow—viz., the occasional presence of octahedra of calcium oxalate in thyroid cysts. Mr. Shattock considered the possibility of the acid having a bacterial source and being due to the access of organisms from the intestine; but whilst most of those isolated from the small intestine produce lactic acid no known bacteria produced oxalic acid. In gelatin streak cultures of bacillus coli communis it was not rare to find the jelly grow slowly turbid beneath the culture; but Mr. Shattock had found that this depended upon the precipitation of a carbonate in the form of minute spheres; whatever the acid was that was elaborated in the growth of bacillus coli communis it was not oxalic. Sheridan Delepine, however, had shown that a formation of oxalate of lime occurred in nutrient gelatin when aspergillus niger was grown upon it with access of air.—Dr. KANTHACK said he had recently examined the fluid drawn from the abdomen of a patient who was presumed to be suffering from ascites. The fluid contained no albumin nor could sugar be discovered by ordinary tests. Microscopically there were a number of crystals of oxalate of lime present. He had found similar crystals in the fluid of an ovarian cyst. There were no micro-organisms in the fluid in either of the cases, and he knew of no micro-organism which could produce oxalic acid.

Mr. S. G. SHATTOCK recounted an instance of Chondrifying Sarcoma following Fracture. The fracture occurred in the humerus of a man from a heavy fall. After five weeks union was complete and the arm felt normal; a month and a half later a swelling was noticed for the first time in the region of the fracture. Disarticulation at the shoulder-joint was performed later. Death took place about two years afterwards with symptoms of recurrence in the chest. Mr. Shattock remarked upon the rarity of the sequence and discussed it, drawing an analogy between this and the rarity also with which bone tuberculosis followed fracture, although after contusions of cancellous tissue both sarcoma and tuberculosis were frequent events. Two possible reasons were suggested. One was the more active cell-processes that ensued after the graver injury and which successfully inhibited the growth of a particulate virus lying in or reaching the part. The other was the function of the red marrow in locating both bacteria and inorganic particles which reached the circulation; a fracture of the middle of a shaft involved adipose medulla; contusions of the ends of the bone involved cancellous tissue, and it was here that any virus would be particularly located.—Mr. BERRY asked what ground there was for believing that the tumour followed the fracture, and suggested that the fracture might really be secondary to the formation of the tumour, and the damage to the bone caused by the latter was the cause of the fracture. A patient came into St. Bartholomew's Hospital with a fracture of the femur. At the necropsy a small secondary epithelioma was found which had eaten away quite two-thirds of the circumference of the shaft, but in that case no tumour at all could be felt during life.—The PRESIDENT mentioned the case of an old man who twisted his leg and broke his femur with the application of but very slight violence. At the post-mortem examination a myeloid tumour was found in his jawbone and in one of the ribs, and the marrow of the bones was noticed to be generally changed in character. There was something in certain of the ends of particular bones which rendered them more liable to malignant disease.—Mr. PEARCE GOULD referred to the case of a woman whose breast was removed for carcinoma five years ago and who sustained a fracture of the right humerus when turning back the bedclothes. He cut down upon the fracture and examined it carefully, but the bone appeared to be normal to the finger. Three months later there was extensive malignant growth in the upper part of the arm. Fracture of the neck of the femur and of the patella occurred through the red marrow, and yet sarcoma following was very rare.—Mr. W. G. SPENCER said that malignant disease might occur in the red marrow apart from tumour, and it should not be forgotten that in the case under discussion the tumour was a chondro-sarcoma of the periphery of the bone and not a marrow growth. Von Recklinghausen had pointed out that those parts of the bone most used near the joints and where the pull of the muscles occurred were more vascular and prone to malignant growths.—Mr. TARGETT said that in confirmation of this it was to be noted that exogenous hydatids selected as sites the vascular epiphysial ends of bone, as at the knee and hip, and in most cases there was a history of accident before the development of the hydatid.—Mr. SHATTOCK, in reply, said that it should be remembered that the sub-periosteal tissue, like the marrow, was extremely vascular, and both were prone to bacterial infection.

Dr. PARKES WEBER showed a specimen of Thrombosis of the Basilar Artery and Atheroma of the Coronary Arteries from a case of Angina Pectoris. The patient was a man fifty-one years of age, who had suffered from syphilis and exhibited crossed hemiplegia. Attacks of angina had come on and had disappeared, and he died ultimately from cardiac failure and ascites. The right coronary artery was nearly obliterated and the left was much contracted by atheroma. There was old thrombosis of the basilar artery and there was also a cyst of the internal capsule.

The following card specimens were shown:—

Mr. J. CLARKE: (1) Multiple Embolic Aneurysms; and (2) Loose Bodies from Sub-deltoid Bursa.

Dr. MORRICE (Salisbury): Deposit of Fibrin upon the Heart.

Dr. FISHER (Clifton): Thrombosis of the Renal Veins in Bright's Disease.

Mr. B. POLLARD: (1) Diverticulum Ilei; and (2) Congenital Occlusion of the Œsophagus.

Mr. GURNEY (Plymouth): Metastatic Sarcoma of Both Breasts.

Mr. TARGETT: Adrenal "Rest" in Kidney.

Dr. HEBB: (1) Carcinoma of the Prostate; (2) Dilated Stomach from Stenosis of the Duodenum; and (3) Hour-glass Contraction of the Stomach.

CLINICAL SOCIETY OF LONDON.

Excision of the Upper Two-thirds of the Fibula for Sarcoma.—Deficient Development of the Lower End of the Tibia after Transverse Fracture.—Sequel to Acute Swellings over the Cranium of an Infant.—Multiple Neuritis of Toxic Origin.—Deficiency of Ribs.—Affection of Speech.—Sacro-coccygeal Tumour.—Adult Rickets.

AN ordinary meeting of this society for the exhibition of clinical cases was held on April 24th, Dr. BUZZARD, President, being in the chair.

Mr. BLAND SUTTON showed a case of Excision of the Upper Two-thirds of the Fibula for Sarcoma. The patient was a woman aged twenty-three who came under his care in November, 1895, with a swelling over the region of the upper end of the fibula. This he cut down upon on Dec. 1st, dividing the musculo-cutaneous nerve and turning its ends upwards and downwards to give him freer access. He excised the tumour with the upper two-thirds of the fibula, being obliged to sacrifice at the same time the anterior tibial nerve and vessels. He then sutured the divided ends of the

musculo-cutaneous nerve and closed the wound. Three days afterwards there was sensation in the parts supplied by the musculo-cutaneous nerve. She developed talipes equinus, which had been remedied by means of a suitable boot, so that she could walk without difficulty. The growth was of the nature of a round-celled sarcoma with a thick fibrous capsule.

Mr. GORDON BRODIE showed a case of Deficient Development of the Lower End of the Tibia after Transverse Fracture. The patient was a man twenty-two years of age who was admitted into the Middlesex Hospital twelve years ago for a transverse fracture of the tibia caused by the overturning of a hand-cart, which snapped the bone above the ankle and caused a good deal of bruising about the joint. The patient was unable to recollect the precise spot where the fracture occurred, but placed it well above the epiphysial line. Examination showed that the end of the tibia was dwarfed in its growth, with an inward curve of the lower fourth of the bone, bringing the internal malleolus into strong relief and causing the tibio-fibular mortise to be inclined inwards slightly, thus giving the foot a list inwards. No irregularity could be detected along the anterior border of the tibia. There was considerable hypertrophy of the lower end of the fibula, and its subcutaneous surface was marked by ridges, and projecting from the anterior border of the malleolus was a large boss of bone which made the breadth one inch greater on this side than on the other. In order to compensate for the position the foot was thrown into by the inclination of the mortise there was well-marked valgus, the tubercle of the scaphoid coming out strongly when the patient pressed his foot on the ground. Roentgen's rays revealed that there was absolute continuity of the bone.

Mr. F. C. WALLIS exhibited a patient previously shown, a child who, on the last occasion, presented a large Diffuse Swelling over the Forehead, limited by the sagittal suture, the nature of which could not be defined. Nothing was done in the way of treatment, and some time later the child contracted measles, after which the tumour cleared up, and now not a trace remained.

The PRESIDENT introduced a case of Multiple Neuritis of Toxic Origin which had been shown by Dr. Mott in October, 1893, and he described the case as one of "multiple infective neuritis" in a paper in February, 1894. The patient at that time was brought to the society on a stretcher, being then paralysed in all his limbs. He had been admitted to hospital in April, 1893, with severe symptoms—hæmaturia, melæna, high temperature, &c.—symptoms, in fact, at first thought to point to typhoid fever. Gradually, however, it merged into a condition of paralysis, with marked wasting of muscles, and it was noted that each exacerbation of temperature was followed by an extension of the paralysis. The patient passed under his own care in May, 1894. Various joints had at different times to be straightened under an anæsthetic to break down adhesions. The knee-jerks were exaggerated. He remained in the hospital until February, 1895, by which time he had recovered power in the legs, and power was beginning to return in the upper extremities. There was, however, still some loss of reaction to galvanic and faradaic stimulation in the arm muscles. He was treated by massage, electricity, and hot-water douches. Dr. Buzzard observed that although the symptoms undoubtedly pointed to multiple neuritis, anterior poliomyelitis was also present, as shown by the spasticity of the paralysed muscles. Cultures of blood from the finger taken during an exacerbation demonstrated the presence of a coccus which Dr. Kanthack had been unable to identify.

Mr J. MURRAY showed for Mr. PEARCE GOULD a case of Deficiency of the Lower Ribs. The patient was a boy aged five, in whom the eighth, ninth, and tenth ribs on the left side were completely wanting, leaving a gap two and a half inches wide. The eleventh rib was smaller than the corresponding rib on the other side, but the twelfth was larger. When he breathed the spleen could be seen moving freely up and down and the diaphragm could be seen rising and falling. There was nothing of interest in the family history. There was no history of any disease of the chest or of maternal impression.—Mr. CLEMENT LUCAS thought the "x" rays might demonstrate the presence of the vertebral ends of the ribs, which were often present in these cases though they could not be felt. The facility with which the spleen could be felt and handled suggested the value of the case for physiological observation.—Mr. MAKINS said that after empyema he had found nearly the whole of a rib gone.

Dr. HERRINGHAM brought forward a case of Curious Affection of Speech. The patient was a boy aged thirteen years who, before he was six years of age, began to speak in a slow and markedly syllabic manner. He had a great deal of difficulty in beginning words except those commencing with labial consonants. He was otherwise intelligent and in good health, had no mental symptoms and no symptoms of disseminated sclerosis. The defect appeared to be more one of articulation. He had, however, two other motor symptoms, viz., "jumps" and "shakes," which consisted of convulsive movements of the hands and shoulders, which came on suddenly, mostly in the morning. He had also twitchings of the muscles of the face. The defect of speech was noticed as soon as he began to speak. He had measles at four years of age, but the parents believed that even before that attack there was something abnormal in his speech. It was not a progressive disease. There were no ocular symptoms.—Dr. ORMEROD recalled the case of a young man who exhibited a very similar defect of speech which came on after an attack of what he called "sunstroke" when in India. He was when first seen still slightly ataxic and his speech exhibited the same syllabic character as this lad, though he had no hesitation in beginning and he always spoke in a monotone. He had seen the man from time to time since, and he presented no motor symptoms and could walk long distances. Dr. Hughlings Jackson suggested, when he brought the case forward, that it was an example of interference with speech associated with ataxy supervening after some acute infective disease. There was no evidence of meningitis.—The PRESIDENT also remembered the patient alluded to by Dr. Ormerod, and he, too, noticed the similarity of the defect. He suggested that it would be a good thing to record these defects by means of the phonograph, because defects of speech really could never be adequately described in words.

Mr. H. H. CLUTTON showed a case of Sacro-Coccygeal Tumour. The patient was a boy aged three and the tumour, which was enormous, had not increased in size since he first came under observation two years ago, but he (Mr. Clutton) had postponed interference on account of the boy's delicate state of health. The tumour consisted mainly of one large cyst with some solid matter round the base, and per rectum a fluctuating swelling could be felt extending up the rectum rather beyond the reach of the finger. The sacrum and coccyx could be felt projecting over the tumour, showing that it commenced between the rectum and the coccyx. He proposed to tap the cyst at the outer part, reserving the question of dealing with the internal cyst till later.—Mr. CLUTTON also showed a woman aged twenty-six with Spina Bifida, the position of which was, of course, outside the sacrum, thus contrasting with the previous case. The swelling was not quite in the centre: the skin over it was thin; it was congenital and showed a depression with hair sprouting from it. It did not increase in size with coughing. Five years ago he saw in a woman of the same age another case of spina bifida which was twenty-three inches in circumference. In both these cases of spina bifida he advised no interference, but the patients, on account of the approach of matrimony and their inability to assume the dorsal decubitus, insisted on the removal of the tumours.—Mr. BLAND SUTTON observed that the result of intervention in pre-antiseptic days had been invariably fatal, but since that time several successes had been recorded. He added that possibly the tumour felt per rectum might not extend as far as would seem. They did not usually extend above the levator ani. The fatality of the earlier operations was due to intervention having been resorted to at too early an age.—Mr. CLEMENT LUCAS said he had operated some time since on a tumour of this kind consisting mainly of two cysts. He first tapped the most external cyst, carefully sealing the wound to prevent infection, and later repeated the operation for the other, and the result was satisfactory. In another case in which the tumour sprang from the front of the sacrum, pushing up the bladder and rectum and giving rise to troublesome symptoms, he made a horse-shoe incision round the anus and cut away the solid tissue in pieces, and that case also recovered.

Mr. SALTER and Dr. HALE WHITE showed a case of Adult Rickets. The patient was a girl aged fourteen years who exhibited in a marked degree the lesions usually associated with rickets. She had been under observation for two years and the joints had been skiagraphed, showing the exact pathological condition. She was admitted to hospital in January, 1894, for genu valgum, which had commenced in September, 1893. Double osteotomy was performed and she was discharged in March, 1894. Since the operation she had never been able to walk on account of the pain in her ankles. In December,

1894, she fell and fractured her left thigh, apparently with very slight violence. There was marked atrophy of both vasti interni and general muscular weakness. The bony lesions were not accompanied by any sweating, painful sensations, or restlessness, usually met with in association with rickets in infants, nor did she appear to have had rickets when a child. The disease did not involve the epiphysial line or the epiphysis, but the shaft of the bone above it.—Mr. CLUTTON remarked that there was a distinct ridge at the epiphysial line in the case shown. The skiagraph, of course, would not assist, as the cartilaginous enlargement would not appear in the picture. In one such case, in which there was slight thyroid enlargement, he had given thyroid extract with success.—Dr. COLMAN agreed that the bone changes in the case shown were precisely like infantile rickets. From a case of adult rickets seven years ago he had an opportunity of examining wedges of bone under the microscope, and the changes in that case also were like those seen in early rickets.

Dr. HARRY CAMPBELL showed a typical instance of Acromegaly in a man aged forty-six and he demonstrated that the conditions present were precisely those which obtained in the anthropoidal apes. The occipital crest was marked; there was excessive development of the frontal and maxillary sinuses; the head was prognathous, the lower jaw being underhung. The spinal dorsal curve was exaggerated and the antero-posterior chest measurement increased. The tensor vaginæ femoris was excessively developed and the nails were striated. The eyesight was normal; the urine contained albumin, but no sugar.

EPIDEMIOLOGICAL SOCIETY.

The Mortality and Sickness in Back-to-back and other Artisans' Dwellings in Bradford.

A MEETING of this society was held on April 17th, Mr. SHIRLEY F. MURPHY, President, being in the chair.

Dr. ARNOLD EVANS read a paper on the Mortality and Sickness in Back-to-back and other Artisans' Dwellings in Bradford. These were all "self-contained" and either of the "through-and-through" or the "back-to-back" kind, the latter being in long unbroken rows or in what were inaccurately described as "blocks of four," a passage dividing each two pairs, though only on the ground floor, the upper floors being continuous. "Through" houses had two rooms on the ground floor and two bedrooms, with perhaps an attic, above, a garden in front and a yard in which were the privy or closet and ashpit behind, with a door communicating with a back passage between the parallel streets. Back-to-back dwellings of the older type had a living room and scullery on the ground floor, with two bedrooms above, and each had its yard with privy and ashpit between it and the street; but in those of the newer kind, while one pair were flush with the street the other looked out on to a large yard common to the whole block, with two ashpits and four privies ranged along the further wall, the passages between the blocks giving the occupants of the hinder pair access to the street and those of the front pair to the yard, the purpose of this peculiar arrangement being to secure some amount of cross-ventilation through the scullery windows opening into this passage. Dr. Barry and Mr. Gordon Smith, in their report to the Local Government Board, stated that while the practice of building back-to-back houses, formerly very general in the north, had been almost wholly discontinued in Lancashire and Staffordshire, it still prevailed in the West Riding, and that 64 per cent. of the dwellings of the working classes erected in Bradford between 1876 and 1886, affording accommodation for 20,000 persons, had been of this description, a prohibitory by-law passed in 1862 having been rescinded seven years later, whether through prejudice or considerations of cost and rental it was hard to say, for the effect of the special regulations as to the arrangement of streets, yards, and passages was that actually more ground was required for the new "back-to-back" than for "through-and-through" houses and the saving in bricks and mortar was insignificant. Even a better class of dwellings, which might almost be styled villas, were being thus built, though the defects in the way of ventilation were insuperable, and the scullery window in a covered passage utterly insufficient, to say nothing of the inconvenience and indecency of the position of the privies and their tendency to become a nuisance, or the fact that when streets of such houses ran east and west those on the north side never saw the sun. These points were strongly insisted upon by the late Mr. Netten Radcliffe and Mr. Gordon Smith in their reports, but the building of "back-to-back" houses of both kinds went on till June, 1894, when the decision of Justices Wills and Wright [Travis *v.* Uttley, Q 13], that drains common to several houses were sewers for the maintenance of which the sanitary authority was responsible, induced the corporation to insist on separate drains to each house and put a check on their further erection. Dr. Barry having already suggested inquiries into the relative prevalence of pulmonary and infectious diseases in "back-to-back" and "through-and-through" houses, Dr. Bell undertook the work at Bradford, Dr. Herbert Jones at Shipley and Saltaire, and Dr. Tatham and Dr. Niven in Manchester. Dr. Bell found that the "through-and-through" houses seemed to compare unfavourably with the "back-to-back," and the Manchester houses were in other respects utterly unfit for human habitation; but Dr. Jones found that the mortality from all causes, and from phthisis and infectious diseases and diarrhœa, was greater in back to back houses, other conditions being alike. More recently Dr. Evans, selecting groups of typical houses with occupants of a similar class, fully confirmed the opinion as to their relative healthiness:—

Class of houses.	No. of houses.	Population.	Average persons in house.	Average square yards to each house.	Average houses to acre.	No. of houses to acre.	No. of persons to acre.	Weekly rent, including rates.	Death-rate per 1000.		
									All causes.	Phthisis.	Diarrhœa.
Back-to-back continuous	619	2728	4·4	98·6	24·2	49·0	215·6	4/6-5/9	17·7	2·41	(?)
Back-to-back in fours	1928	9116	4·7	125·0	26·5	38·7	181·89	5/3-6/-	18·3	1·68	0·25
Through houses	751	4002	5·3	116·6	22·0	41·5	219·95	6/-7/6	15·1	1·39	0·39

Of the 45,000 houses in Bradford 20,000 were back to back, and the mean death-rate for the whole borough in the years 1890 to 1892 from all causes was 21·12, from phthisis 1·853, and from diarrhœa 0·540 per 1000. The population of the selected groups was not Irish, but average respectable artisans, alike engaged in a single industry, the manufacture of woollen goods.

Dr. H. F. PARSONS remarked that it was only in the West Riding, where wages were not lower or the cost of building higher than elsewhere, that "back-to-back" houses were still erected, old prejudices dying hard. Leeds, for example, had been the last to adopt any reform.—Dr. HERBERT JONES said they were unknown at Crewe, where 78 per cent. of the houses were rented at or under 5*s.* a week.—Dr. E. F. WILLOUGHBY insisted on the fallacy of death-rates that did not take account of the character of the population, their poverty, and overcrowding as shown in a comparison of the relative health of the occupants of successive storeys in the huge houses in German towns.—Dr. T. M. LEGGE supported this contention from his personal acquaintance with the housing of the poor on the Continent.—Brigade-Surgeon R. PRINGLE could not understand the small average number in the families or the low death-rate from diarrhœa.—Dr. BULSTRODE and Fleet Surgeon PRESTON having made similar remarks, the PRESIDENT observed that though "back-to-back" houses had almost disappeared in London, many of the large blocks, as those erected under the Guinness Trust, were practically such. The report of the London County Council on overcrowding showed that the death rate from phthisis, diarrhœa, and all causes was in direct ratio with the number of persons to a room.

Dr. EVANS, in reply, explained that in Bradford there was but one industry and very little difference in the social conditions of the population, though, to ensure identity, he had taken districts too small to admit of more minute statistical comparisons.

HARVEIAN SOCIETY OF LONDON.

Some Unusual Swellings of the Parotid Gland.—Prognosis in Chronic Non-suppurative Catarrh of the Middle Ear.—Demonstration of the Roentgen Rays.

A MEETING of this society was held on April 16th, Mr. J. H. DREW being in the chair.

Mr. RAYMOND JOHNSON read a short paper on Some Unusual Swellings of the Parotid Gland.[1]—Dr. CODDE ADAMS said that the subject of parotid swelling was one of extreme interest to those who, like himself, were engaged in general practice. He was struck by the unsatisfactory state of our knowledge as to the etiology of such conditions, and as a result he felt himself frequently compelled to enforce all the annoying measures of isolation and quarantine where he had doubts as to whether the case was really one of mumps at all. This, indeed, had been done in the majority of the cases just described by Mr. Raymond Johnson which were both interesting and instructive. Mr. Johnson, however, had not made reference to the possibility that such swelling might be caused by reflex action. It had been noticed that arrest of salivary secretion always took place in the dog if the intestines were handled. Mr. Stephen Paget had published in the Transactions of the Clinical Society an interesting account of a case of parotid swelling occurring in connexion with, and apparently as a result of, severe fæcal accumulation in the intestine. Mr. Paget had also published a record of no less than 102 cases of parotitis associated with operative interference with the abdominal organs. He (Dr. Adams) had no very defined ideas to lay before the meeting, but he would like to suggest the possibility that many cases of so-called mumps might really be instances of reflex hyperæmia resulting from intestinal indigestion. At all events, he hoped his remarks might assist criticism and discussion.—Dr. DUNDAS GRANT remarked that one of Mr. Raymond Johnson's cases seemed to have improved very rapidly after the application of liniment of iodide of potassium. This recalled to his recollection a case of suppurative parotitis under his own care when in general practice in East London, in which no benefit ensued from even a considerable number of incisions. The late Mr. Chance was called into consultation, and he recommended abstention from all instrumental interference, predicting that under the use of iodide of potassium ointment the condition would speedily come to a favourable termination. This prediction was amply verified, and he (Dr. Grant) thought the therapeutic hint might be found of value by those who met with these decidedly rare cases. He drew the attention of the society to observations which he had made on some cases of mumps in which it was clearly shown that the use of pilocarpin influenced the course of the disease most favourably in contra-distinction to belladonna. Pilocarpin was also the best remedy for the labyrinthine effusion which sometimes produces absolute deafness in mumps.—Mr. RAYMOND JOHNSON replied.

Dr. WILLIAM HILL read a short communication on Prognosis in Chronic Non-suppurative Catarrh of the Middle Ear. He excluded from the purview of the paper cases of only a few months' standing and also more or less chronic deafness in children and young persons, "because these are admittedly the most favourable classes of cases the otologist has to deal with, and the results of treatment are often brilliant and nearly always encouraging; with adults, however, it is frequently quite otherwise." On account of anatomical conformation of the tympanum and its delicate structure it was obvious that when catarrhal changes went on for even only six months permanent damage was likely to result, so that absolute cure could rarely be looked for, and they were fortunate when they could promise and obtain a moderate improvement in condition or even arrest the disease, which is usually progressive. After alluding to the forms of middle-ear catarrh and to the diagnosis, Dr. Hill briefly discussed the more obvious factors which influence prognosis, such as the age and general health of the patient, the duration and degree of the deafness, and the damage done to the membrane, ossicular apparatus, and Eustachian tube; more detailed consideration was, however, devoted to "certain points which are often of distinct aid in forming a prognostic opinion which is something more than a mere guess." The mode of onset was instanced: deafness coming on gradually and almost imperceptibly and resulting in marked dulness of hearing in the course of a year or two was usually due to sclerosis and was incurable; a history of sudden onset was, as a rule, much more favourable, especially when due to a definite cause, such as nasal and pharyngeal catarrhal hypertrophies. Amongst exceptions to this rule were noted tympanic disease or acquired syphilis and cases of extensive destructions produced by scarlet fever and other exanthemata. In this way prognosis was seen to be influenced by the cause. When tympanic trouble is due to throat and nose diseases, provided the aural lesion is not great the outlook is good if the cause can be removed, even when on account of want of ventilation from the blocked tube the impairment to audition may be considerable, and even in long-standing cases the result is occasionally gratifying. Chronic cases of malarial, rheumatic, and gouty origin usually resist treatment. Deafness of dental origin requires early treatment. When no extrinsic cause is ascertainable, as in tympanic sclerosis, the otologist is usually powerless even when the disease has only lasted a few months. Variability in the amount of deafness is nearly always an encouraging sign; it may depend on the general health, on locality, atmospheric conditions, occupation, &c.; in women pregnancy, lactation, menstruation, and the menopause often act adversely. A very hopeful form of variation in hearing power is improvement as the result of the air douche applied through the Eustachian catheter or otherwise, as is also relief afforded by the production of positive and negative pressure in the meatus by Siegle's or Delstanche's methods. Some patients hear better immediately after the introduction of a tympanic bougie, and, again, after fluids have been injected into the middle ear through the Eustachian catheter; when such exceptional results are obtained there is always hope of some permanent relief by a course of appropriate treatment, and the same holds good for pressure applied to some part of the membrane by means of probes and other supports. Tinnitus, paracusis Willisii, and vertigo are generally held to be of unfavourable import, but the prognostic value of these symptoms has probably been over-estimated.—Dr. DUNDAS GRANT expressed his accordance with the views set forth in Dr. Hill's paper. He thought that it was most essential to differentiate between the two classes of cases—the exudative, in which the Eustachian tube was narrowed, and the sclerotic, in which this was not the case, the disease being mainly centred in the articulation between the stapes and the vestibule. He attached great value to the use of Eustachian bougies, and he had found that Weber-Liel's fine gum-elastic intra-tympanic catheter was the most convenient form of instrument to use for the purpose. It is smooth and flexible, and being hollow the fact that it was in the right position could be determined by auscultation. He presumed that Dr. Hill would not continue the use of the bougie in cases in which the Eustachian tube was quite free. The prognosis, in his experience, was much more unfavourable in the case of females than that of males.—Dr. HILL replied.

Mr. J. T. LEON and Mr. R. W. DODGSON of St. Mary's Hospital gave a demonstration of the Roentgen Ray Process of Photography.

[1] This was published in full in THE LANCET of April 18th, 1896.

KIDDERMINSTER MEDICAL SOCIETY.

Exhibition of Cases and Specimens.—The Pathology, Symptoms, and Treatment of Some Chronic Urethral Discharges.

A MEETING of this society was held at the Kidderminster Infirmary on April 17th, Mr. W. MOORE, President, being in the chair.

The PRESIDENT exhibited a man with a Rare Form of Eruption on the Back of the Wrist and Side of the Face. Each patch commenced as a small papule and gradually spread; the man attended horses, and the President regarded the case as one of infection.

Dr. EVANS showed a lad upon whom he had operated for Hammer-toe by dividing the lateral ligaments subcutaneously with a very good result.

Dr. EVANS and Mr. J. L. STRETTON demonstrated the use of the Phonendoscope on a case of Bronchitis.

Mr. J. L. STRETTON showed:—1. A large Multilocular Ovarian Cyst with twisted Pedicle removed from a pregnant woman. The patient, aged thirty-seven years, married, had had several children, and was admitted into hospital in April

with the following history. She had been a healthy woman until January, but since then she had noticed the abdomen getting larger and she had occasional pain. She had not menstruated since the end of December and thought herself pregnant. Five days before admission she was suddenly attacked with acute abdominal pain and sickness; the abdomen had greatly increased in size, there had been no action of the bowels, and the urine had been drawn off by a catheter. The patient lay on her back. Her complexion was pale. She complained of abdominal pain. The tongue was moist. There was no sickness. The temperature was 99·4° F. The abdomen was considerably distended and tympanitic; it was very tender, especially on the left side. A tumour could be felt extending to the umbilicus, but could not be distinctly palpated owing to the distension. Per vaginam the tumour appeared to be distinct from the uterus. Mr. Stretton opened the abdomen by a median incision. On opening the peritoneal cavity an object like a gangrenous piece of intestine presented. This proved to be a locule of a multilocular ovarian cyst with the pedicle twisted. About five pints of fluid were evacuated and the cyst removed. (The uterus was enlarged to the size of a three or four months' pregnancy.) The abdomen was flushed with boracic solution and closed with silkworm gut sutures. The patient made an uninterrupted recovery. The first dressing was on the seventh day. There was no suppuration or rise of temperature. 2. The Bones consisting of the Lower End of the Humerus, with the Heads of the Ulna and Radius removed by Excision for Tuberculous Disease. 3. Portion of the Right Ramus of the Lower Jaw, with two Molar Teeth and one Bicuspid Tooth, excised for Malignant Disease. The patient was a man aged sixty-four; he had an epithelioma of the lower lip removed by Mr. Stretton last June. There was a lump the size of a small orange firmly attached to the lower jaw, which had been growing for two months. Mr. Stretton excised the growth together with the portion of the ramus and submaxillary gland. The patient made an uninterrupted recovery and was not much inconvenienced. The growth apparently commenced in a gland and spread to the periosteum, and so involved a small portion of the surface of the bone.

Mr. JOSEPH ROBINSON read a paper on the Pathology, Symptoms, and Treatment of Some Chronic Urethral Discharges.

Reviews and Notices of Books.

The Surgical Diseases of Children and their Treatment by Modern Methods. By D'ARCY POWER, M.A., M.B. Oxon., F.R.C.S. Eng., Demonstrator of Operative Surgery at St. Bartholomew's Hospital; Surgeon to the Victoria Hospital for Children, Chelsea; Examiner in the University of Durham; Member of the Conjoint Examining Board of the Royal Colleges of Physicians of London and Surgeons of England. With Illustrations. London: H. K. Lewis. 1895. Price 10*s.* 6*d.*

THIS work on the Surgical Diseases of Children will doubtless meet with general acceptation by the profession, for, as the author points out in the preface, there are few books in English exclusively devoted to the surgery of childhood. It does not pretend to be more than a guide to those who wish to pursue each subject more thoroughly than can be done in a text-book, but to make it useful the author has been at some pains to verify his references. Mr. Power is already well known for his writings on various subjects of medical interest and he does not therefore appear for the first time as an author. Some years have now elapsed since the last edition of a work such as this, and there has been considerable advance in this department as in other departments of surgery. In intracranial disease and its treatment, for instance, there has been a marked change, and the present position of surgeons as regards disease of the temporal bone and the cerebral inflammations arising from it, the treatment of meningitis of tuberculous origin, &c., is well placed before the reader. Other chapters are deserving of special notice; for example, those which deal with the tuberculous diseases of bones, joints, and synovial membranes, surgical diseases of the air passages, and the operations of tracheotomy and intubation. The work is not, however, without some drawbacks, which will, we hope, be remedied in the next edition. To us it bears the marks of somewhat hasty compilation and in several parts falls short of the ideal text-book. The author excuses his neglect of talipes and its treatment because there is a recent monograph on that subject, but there are few departments of surgery which might not be passed over if this excuse could be accepted for the omission, and the department of orthopædics is one which demands considerable attention in all hospitals devoted to the treatment of children. Lateral lithotomy is not given "because it is described in every text-book in surgery"; but so are the other operations given in the book. He is also inclined to introduce somewhat difficult terms (osteopsathyrosis, for example) to describe certain diseased conditions, for which students will hardly thank him. Mr. Power recommends two forms of silver tube for use after tracheotomy—Durham's and Parker's. These are undoubtedly the best, but it is a little difficult to understand what he means when he recommends later that if blood gains access to the trachea during the operation the two cut edges of the tube may be drawn upwards into the wound and the trachea may be freed, &c.; also when he speaks, without further explanation, of ulceration of the innominate or carotid arteries caused by the pressure of the lower end of the tube the reason is not obvious, for with the tubes recommended there is no fear of this accident. A more detailed explanation as to the insertion of sutures in the radical cure of inguinal hernia is, we think, desirable. It is surely as wrong to speak of a hernia "of the pleura" into the neck as it would be to speak of a hernia of the "peritoneum"—indeed more so; for in the former instance the pleura extends normally into the base of the neck beyond the chest walls. It is not easy to imagine a ruptured urethra in which there is no bleeding from the orifice, and we find no information as to the treatment of the traumatic stricture which results from such a rupture—one of the most difficult of all diseases to treat satisfactorily in a boy. We cannot agree with the statement that new growths on the tongue are as common in children as they are in adults. There are some other statements to which we take exception, but considering the general excellence of the book we must regard them as due to want of sufficiently careful proof-reading and not as the author's deliberate opinions. The type is clear and the illustrations (with the exception of Fig. 15) are good and adequate; the index is full, and the references are valuable.

Lehrbuch der Physiologischen Chemie. Von OLOF HAMMARSTEN, o ö Professor der Medizinischen und Physiologischen Chemie an der Universität Upsala. Dritte völlig umgearbeitete Auflage. Mit einer Spektraltafel. Wiesbaden: Verlag von J. F. Bergmann. (*Manual of Physiological Chemistry.* By OLOF HAMMARSTEN, Professor of Medical and Physiological Chemistry at the University of Upsala. Third Edition, entirely revised. With a Spectrum Plate. Wiesbaden: J. F. Bergmann.) 1895.

THOSE engaged in working at physiological and pathological chemistry, and especially those who have worked with the second edition of Olof Hammarsten's "Lehrbuch der Physiologischen Chemie," will welcome his third revised and enlarged edition of this work. In certain points it resembles Halliburton's work on the same subject, especially in so far as it is at once recognised that it can only have come from the pen of a man who is constantly engaged in the investigations of which it treats, and who is at the same time thoroughly well read in the literature of the subject. The natural overlapping of physiological and pathological chemistry, and the importance of a careful application of modern chemical knowledge and

methods to pathological processes, are well brought out. The revision of this edition of the book has in many cases been a re-writing of parts of chapters; the chapter on the Carbohydrates which has been added will at the present time excite special interest. Chapters on Proteids and Fats and a separate one on the Chemistry of Respiration are also valuable additions to Professor Hammarsten's work. As already mentioned, the literature of the various subjects treated is very complete, not only in regard to the references that are given, but also to those that are omitted; for in this part of the work the greatest discrimination has been exercised, and much valuable time will be saved to those who cannot afford to read every little paper that has been written if the investigator will follow Professor Hammarsten's lead. In a supplement of some twenty-four pages a short *résumé* of the literature that appeared after the actual chapters had been written and sent to press, but before the book was published, is given; this is a good plan and might well be widely imitated. It may be added that this, unlike many other German works of reference, is provided with a capital index.

A Manual of Obstetrics. By A. F. A. KING, A.M., M.D., Professor of Obstetrics and Diseases of Women and Children in the Medical Department of the Columbian University, Washington, &c. Sixth Edition, with 221 Illustrations. London: Henry Kimpton. 1896.

THIS book has been written with the purpose of presenting in an easily intelligible form such an outline of the rudiments and essentials of obstetric science as may constitute a good groundwork for the student beginning his obstetric studies. It is confessedly a compilation, and the author expressly acknowledges his indebtedness to several of the larger treatises. He also expects that it may be useful as a work of reference to the practitioner who has little time to look for what he requires in larger works. The publication of the sixth edition is sufficient evidence that the author's intention and expectation in these respects have been amply fulfilled. Several new illustrations have been added to the present edition, and the book has been thoroughly brought up to date.

A feature in which the book differs from several of the works on midwifery in common use in England is in possessing a chapter on the Jurisprudence of Midwifery, in which many of the medico-legal questions with which the practitioner may have to deal are treated in a more or less concise form. We notice also that in the chapter on the Resuscitation of Asphyxiated New-born Children there is a particularly lucid description of Schultze's method of artificial respiration, illustrated by an instructive diagram. It is not by any means every diagram intended to illustrate this method that is easily intelligible to students.

LIBRARY TABLE.

Ueber Episcleritis Periodica Fugax. Von Professor Dr. ERNST FUCHS in Wien. Pp. 45.—This pamphlet, which appears to be an extract from von Graefe's *Archiv für Ophthalmologie*, Band XLI., p. 4, gives an account of a recurrent inflammation affecting the conjunctiva and sub-conjunctival tissue, but which is not attended with any considerable exudation and is of a very transitory nature. Dr. Fuchs gave a sketch of the affection in a short paper he read before the Ophthalmological Section of the British Medical Association last year. In the present paper he gives a fuller account of it and supplies the details of various illustrative cases. The disease differs from ordinary episcleritis in its recurrent and fugacious character and in its occasionally affecting the iris and ciliary zone; it differs, moreover, in leaving no traces behind it and in attacking both eyes either simultaneously or successively. The inflammation is accompanied with pain, lacrymation, and photophobia. The duration of the attack is usually not more than two or three days. The treatment recommended by the author is an appropriate regimen, quinine and salicylate of soda.

Philip's Handy-Volume Atlas of London. London: Geo. Philip and Son. 1896. Cloth, post free, 4*s.* 2*d.*—For a person to find his way about this vast metropolis is becoming a matter of increasing difficulty, and yet to carry about and unfold a large map is tedious and inconvenient. This little book, of a size to go in the pocket, obviates this difficulty. Each sectional map, of scale three inches to the mile, occupies one opening, and an index at the end gives the appropriate reference. It is accurate and convenient, and to the busy practitioner, whether in family or consulting practice, it will be a saving of much time and annoyance. It also contains a list of cab fares and some useful general information.

Ueber Blepharochalasis. Von Professor Dr. ERNST FUCHS. Sep. Abdruck aus der *Wiener Klinische Wochenschrift*, No. 7, 1896. (*On Blepharochalasis.* By Professor E. FUCHS. Reprinted from the *Wiener Klinische Wochenschrift*, No. 7, 1896.) Pp. 5.—The affection described in this pamphlet is a condition of relaxation of the skin of the eyelids causing drooping, but differing from ptosis in the absence of muscular paralysis. It occurs both in young and in old people and in both sexes. The author considers it to consist essentially in an atrophy of the skin and subcutaneous tissue of the lids with thinning and loss of elasticity. He recommends the removal of a horizontal strip of skin from the lid, combined with Hotz's operative procedure.

Ueber zwei der Retinitis Pigmentosa verwandte Krankheiten. (On two Allied Forms of Retinitis Pigmentosa.) Von Professor Dr. ERNST FUCHS in Wien. Pp. 6.—In this pamphlet the author describes under the terms retinitis punctata albescens and atrophia gyrata choroideæ et retinæ forms of retinal degeneration which are associated with myopia and are accompanied by the formation of rounded white spots of retinal and choroidal atrophy which, commencing separately, fuse with one another, forming extensive white areas with convex borders. It is often hereditary.

NOTES FROM SOUTHAMPTON.—The Mayor of Southampton (Mr. M. Emanuel) on April 20th laid a foundation-stone in connexion with the further development of the sanitary works of Southampton rendered necessary by the enlargement of the borough. The full scheme will treat 1,350,000 gallons of sewage in dry weather, or 3,000,000 gallons including storm water. Tanks receive the sewage for treatment at a level to allow the discharge of the effluent on the ebb tides. The refuse destroyer has been enlarged and will, it is arranged, provide the necessary power to lift the sewage to the tanks mentioned. The sludge from the tanks will be conveyed thence by a sealed main and discharged into sealed reservoirs, where it will be chemically treated and allowed to precipitate a second time. Then the sludge will be pressed into large cakes and sold to agriculturists if possible; if not it will be destroyed by fire with the house refuse. At the same time the sewerage system will be improved and extended, and the whole cost is put at £40,000. At the last meeting of the Southampton County Council the medical officer (Mr. A. W. Harris) reported the occurrence of five cases of small-pox. The infection of the first was still a mystery; the second occurred thirteen days later, the patient being a lodger in the same house; the third was that of the inspector of nuisances who was engaged in the removal of the first case; the fourth occurred in a lad living next door to case No. 1; and the fifth was imported on board the troopship *Dilwara*. It was remarked by Mr. Eliot that the period of incubation had passed since the last case without a further recurrence. A very virulent case was brought to the port but was not landed, being taken directly to the hospital ship, where all five patients are removed.

Analytical Records
FROM
THE LANCET LABORATORY.

MEDICATED SOAPS.
(YARDLEY AND CO., LIMITED, RIDGMOUNT-STREET, E.C.)

APART from their medicated character these soaps present a well-balanced composition, so that the soap basis itself is not injurious to the skin. They are, in fact, superfatted and accordingly quite free from any excess of alkali. We have received and examined two specimens, the first consisting of superfatted ichthyol soap containing 5 per cent. of the ichthyol ammonium compound, and the second of superfatted soap containing 3 per cent. ammonium ichthyolate and 2 per cent. Peruvian balsam with sapo mollis B.P. Besides these Messrs. Yardley and Co. prepare the following: superfatted benzoin soap; superfatted ichthyol and tar soap; superfatted camphor, sulphur, and Peruvian balsam soap; salicylic sulphur soap; and hygienic soap. The formula of each and all is admirably adjusted to the specific requirements for which they are individually prepared. In various skin complaints the use of such soaps, and especially those containing ichthyol, is of well-known value.

INVALID CONSOMMÉ.
(G. VAN ABBOTT AND SONS, 6, DUKE-STREET MANSIONS, GROSVENOR-SQUARE, W.)

Preparations of this class though of a moderate degree of nourishing power are of distinct value to the invalid because they are easily digested besides being palatable and attractive. The degree of nourishing power is of course moderate in a preparation containing 3·70 per cent. total solid matter; but it makes an excellent *consommé*. It is a clear amber-coloured jelly liquefying readily on warming. Analysis gave the following results: water, 96·30 per cent.; organic matters, 2·49 per cent.; and mineral matters, 1·21 per cent. The organic matter contained albumin, 0·07 per cent.; peptones, &c., 1·08 per cent.; and crystalline principles, 1·34 per cent. It is a preparation which the invalid will be grateful to have included in his dietary.

"ORION" SOUTH AUSTRALIAN WINES.
(E. BURNEY YOUNG, SOUTH AUSTRALIAN GOVERNMENT BONDED DEPÔT, OFFICES, 35, WALBROOK, E.C.)

The steady increase in the importation of light, pure wines from our "big colony" into this country is distinct evidence of their growing popularity and of a healthier demand in the direction of alcoholic beverages. Australia is at a moderate cost sending us really good wines of the excellent type of those before us, and each year sees a marked improvement in the tone and quality of the vintage. The following analyses of three samples of the "Orion" brand, which have the unquestionable advantage of being certified as pure and sound by the experts of the South Australian Government, illustrate the composition of these wines and serve to bring out their really excellent qualities. Cabernet: alcohol, by weight 11·69 per cent., by volume 14·46 per cent., equal to proof spirit, 25·34 per cent.; extractives, 2·27 per cent.; mineral matter, 0·28 per cent., containing 0·8 per cent. oxide of iron; fixed acid, reckoned as tartaric acid, 0·4 per cent.; volatile acid, taken to be acetic acid, 0·039 per cent.; and glucose, 0·14 per cent. This wine was in excellent condition and, as will be seen, is free from excessive acidity, contains a minimum of sugary constituents, possesses body, while it exhibits an acceptable and characteristic flavour. Burgundy: alcohol, 13·54 per cent. by weight, 16·70 per cent. by volume, equal to 29·27 per cent. proof spirit; extractives, 2·63 per cent.; mineral matter, 0·25 per cent., containing 0·8 per cent. oxide of iron; fixed acid (tartaric acid), 0·38 per cent.; volatile acid (acetic acid), 0·10 per cent.; and sugar, 0·16 per cent. This wine is of a rich Burgundy character, containing somewhat more extractives than the last, but still only trifling quantities of volatile acid and sugary constituents. It is a sound and pure product and well adapted as an invigorant and tonic. Riesling: alcohol, by weight 11·77 per cent., by volume 14·56 per cent., equal to 25·51 per cent. proof spirit; extractives, 2·34 per cent.; mineral matter, 0·19 per cent., containing 1 per cent. oxide of iron; fixed acid (tartaric acid), 0·33 per cent.; volatile acid (acetic acid), 0·011 per cent.; and sugar, 0·20 per cent. This is an agreeable light white wine of the well-known Riesling stock; it is "clean" and pleasant to the palate. Its alcoholic strength is practically the same as the Cabernet wine; the volatile acidity is practically *nil*, and the amount of sugar is very small; its genuineness cannot be doubted. The wines one and all were found to be quite free from added and objectionable preservatives. Taking these results as a whole we may remark that they are entirely in accordance with the guarantee that these wines are pure and sound.

LEVICO (ARSENIO-FERRUGINOUS) WATER.
(HERTZ AND COLLINGWOOD, 38, LEADENHALL-STREET, E.C.)

Levico Water has recently come to the front as being of peculiar value chiefly in the treatment of chlorosis, anæmia, and in syphilitic conditions. It is mentioned very favourably in the clinical records of many physicians on the Continent. The water is derived at an altitude of nearly 5000 ft. above sea level on a branch of the Monto-Fronte Hills about twelve and a half miles distant from Trient, in the Southern Tyrol. The springs from which the water is drawn occur at Levico, a small health resort situated at the foot of the hills. There are two perfectly distinct springs, the one yielding a water rich in both ferruginous and arsenical constituents, and the other a water of a weaker arsenical and ferruginous composition. We have recently examined both waters, which may be procured in this country in bottles. They both contain iron, chiefly in the ferrous state, in large excess, a traceable amount also of copper, and a distinct quantity of arsenic. The strong water contains the equivalent of about one-twelfth of a grain of arsenious acid per pint, along with thirty-four grains of iron salt; and the mild water contains just a tenth of the quantity of arsenic per pint, with eight grains of iron salt. These constituents probably have their origin in the fact of the water flowing through a bed of iron pyrites, containing, as it usually does, a noteworthy proportion of arsenic. It will be seen that the quantity of arsenic is small, but, as is well known, arsenic is most effectual in conditions of anæmia when administered continually in small doses. It is associated in Levico Water with iron, the assimilation of which in acting as a powerful tonic is calculated to be assisted by the favourable action of arsenic on the nervous system. The therapeutic value of the Levico Water in various conditions of disease and weakness is spoken of so highly on the Continent, and its administration appears to be attended with such benefit, that practitioners at home may find it worth while to give this interesting natural water a trial.

(1) VARIOUS PALATINOIDS; AND (2) SCULCOPINE.
(OPPENHEIMER, SON, AND CO., LIMITED, 14, WORSHIP-STREET, E.C.)

We have received from this firm specimens of bi-palatinoids of ferri hypophos. co., in which the value of this particular form of administering drugs which together are unstable is clearly demonstrated. Thus the tendency of the strychnine to deposit in the ordinary syrup is obviated, and the risk of the patient taking the last dose with a dangerous amount of deposited alkaloid in it is avoided. Since the contents of the bi-palatinoid are not tasted there is no necessity for the use of syrup, which in some cases may give rise to objection. In addition, accuracy of dosage is secured and the

bi-palatinoid is easily taken. Of undoubted convenience and value, also, are the palatinoids containing chlorodyne (1 minim) and the palatinoid containing pure creosote (½ minim). The creosote in the latter is of a specially refined kind, and by this means of administration the unpleasant and persistent effects of the drug in the mouth are avoided. Sculcopine is described as an alcoholic distilled extract of fresh hydrastis canadensis, containing all the active principles of the drug, which are of value in the treatment of hæmorrhages and inflammatory and irritating surfaces. It is a clear, yellowish liquid, with persistent bitter taste. With perchloride of iron it gives practically no reaction indicative of tannic acid. It is said to be a valuable hæmostatic in uterine hæmorrhages and a tonic and sedative, and is of peculiar value in inflammatory and irritable conditions of the mucous surfaces.

New Inventions.

AN ARTIFICIAL NOSE AFFIXED WITHOUT SPECTACLES.

SOME months ago I published a case in which a woman whose nose had been destroyed by lupus had had the missing parts artificially replaced by a vulcanite nose held in place by spectacles. Since publishing this case I have made several noses and have discovered many improvements in the method of adjustment which seem to me worth recording. In those cases where spectacles are necessary the main difficulty to be overcome is the line of shadow at the sides where the painted nose ends. This I have greatly modified by means of tinted wool prepared for me with great patience and ingenuity by Mr. Martindale of New Cavendish-street. The spectacles themselves have been rendered much firmer

by a special shank to go round the ear, which Mr. Hawes has contrived. The colour and texture have also been rendered more life-like by the use of coloured powders of varying tints also prepared for me by Mr. Martindale. Lastly I have in two cases dispensed with glasses altogether, and attached the nose with spirit gum. The accompanying illustration is of one of these cases, which was shown at a recent meeting of the Odontological Society. The great difficulty is the modelling. If the new nose is not in keeping with the rest of the face no ingenuity can disguise its nature; if, on the other hand, it is the right type and properly modelled its colour may be far from right and still it will not attract attention.

ARTHUR S. UNDERWOOD,
Wimpole-street, W. Professor of Dental Surgery, King's College.

AN ASEPTIC CATHETER.

THE complete asepticity of catheters being of great consequence in the interest of the patients, any means by which its attainment is facilitated tends to lighten the work of the surgeon. With this end in view I have devised a catheter which is not tubular but consists simply of a grooved

staff with a solid beak. I think that it will in many cases be found convenient by country practitioners and by patients although the principle cannot be applied to small-sized catheters such as would be used in very tight strictures. It has been made for me by Messrs. Gardner and Son of Edinburgh and Glasgow.

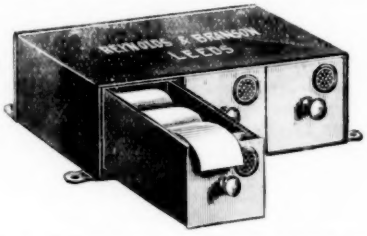
R. W. FELKIN, M.D.
Alva-street, Edinburgh.

THE "VENTAIR" CAP.

THERE is room for a good deal of improvement from a hygienic point of view in the construction of hats and caps. The chief difficulty consists in making a cap which shall be waterproof and protective to the head and yet which shall admit of ventilation without danger of chill. In fact, the difficulty is to avoid the two extremes of, on the one hand, too free draught, and, on the other, of no ventilation at all. The "Ventair" cap aims with some distinct success, we think, at producing a comfortable and at the same time a hygienic covering for the head. The cloth or material from which the caps are made is so woven as to leave open-work spaces which may be seen through, but which do not permit water, odd as it may appear, to penetrate the material. At the same time ventilation freely and uniformly takes place. We have exposed a cap to a heavy shower of rain with the result that though the external surface was freely wetted there was no sign of wet inside, and on briskly shaking the cap most of the water on the outside could be removed. For cyclists, sportsmen, and others it should supply a much felt want. The makers are Messrs. Ingle and Co. of 20, Cheapside, E.C.

PATENT DUSTPROOF SELF-CLOSING DRAWERS.

MESSRS. REYNOLDS AND BRANSON, surgical instrument makers, &c., of 13, Briggate, Leeds, have taken advantage of the fact that dust is sucked into drawers and boxes with a fall in the temperature of the air by making a drawer with all its parts tight-fitting except a portion in front called an air filter, loosely packed with a suitable filtering medium. The result of this is that the air, taking the easiest passage, on contracting or expanding passes through the filter, leaving



the dust it contained in the filtering medium, which on becoming dust-laden can be easily renewed and that practically without cost. For the storage of surgical dressings and such-like things the invention should be valuable. The specimen which is before us is neat in appearance, being made of drab-enamelled tin. By means of a spring the drawer is made self-closing, but remains open when pulled out to the maximum by slightly depressing it. The illustration shows a nest of three drawers, but they are made in all sizes with as many compartments as may be desired. The price of a single drawer is 7*s.* 6*d.*, set of four £1 5*s.*, and set of eight £2 2*s.*

THE LANCET.

LONDON: SATURDAY, MAY 2, 1896.

"THE Battle of the Clubs," as related by our Special Commissioner with a fulness of detail never before realised, cannot leave the profession where it found it. If such revelations do not lead to a better state of things they must lead to something even worse, if that can be. They have been effective at least in this respect: that they have placed the whole system before the profession. Possibly many of the facts that have been elicited and so clearly exposed by our Commissioner are known to the General Medical Council or to the committee appointed by that body for the special investigation of this subject. But whatever may have been the evidence taken by that committee it was never published. It seemed to convince the Council that there was much that required the attention, perhaps the condemnation, of the profession, acting through its corporations or its voluntary associations. But it was given in confidence and was not of much practical utility. It is altogether otherwise with the remarkable communications of our Special Commissioner. They are based on personal visits to places as different as Brussels from Birmingham, or Portsmouth from Leicester, or Lincoln from Walsall. They embrace every kind of club, from those conducted by laymen to those exploited by one or other of the great friendly societies, or by an amalgamation of these into a huge overgrown medical aid association, or the venture of a commercial company carrying on the double business of life assurance and medical attendance. He has seen all persons concerned in such ventures. He has listened to every side of the question and given a fair hearing to apologists. These communications have been going on now for a great part of a year and they have been practically uncontradicted. There has been no serious answer to the main charges, which are repeated with painful monotony in the account of every successive place visited—viz., that the medical club system has become a huge tyranny all over the country, interfering rudely with the old system of private practice, or private club practice under which there was a lasting and friendly relation between a given medical man and the people whom he attended, and establishing in its place a monster system of wholesale medical attendance where patients are seen sometimes at the rate of sixty an hour—and in epidemic times even yet more rapidly—and for which the medical man receives remuneration at the rate of 3*d*. or 4*d*. a visit. This would be bad enough if it was applied only to the poorer section of the working classes, but it is applied to the wealthier section—to well-paid artisans and mechanics and foremen. Nor does it stop there even. The intolerable feature of the system is that it is applied unblushingly to all classes—to tradesmen, very extensively to publicans, even to wealthy employers of labour residing in comfortable villas two or three miles out of town who expect the medical man to leave the poorer members and to attend to them for the pittance of 4*d*. a visit. Ex-mayors, aldermen, and councillors—gentlemen who would be ashamed to draw sick allowance from the funds of the lodges of which they are members—are not ashamed to take the medical man's services at 3*s*. 6*d*. a year, of which he perhaps gets a third, though they can command a consultant from a neighbouring town and pay him 10 or 20 guineas. These are the remarkable facts which remain in uncontradicted evidence in our pages and which have brought things to a sharp pass between the medical profession of England and the working classes.

The crisis is so acute that at the recent conference of the Friendly Societies' Medical Alliance held in Wednesbury on April 16th, the meeting, according to the *Nottingham Daily Guardian*, was mainly occupied with the strained relations between the medical profession and the various affiliated associations. Well might the conference be so occupied. When the friendly societies of England estrange the medical profession they injure themselves, yet if all evidence is not false they are sweating medical men on a wholesale scale and they are using their organisations to destroy the private practice of medicine. We expect better things of the working classes. They are getting rapidly richer, and their first duty to a profession which has always treated them well is to use some of their accumulating savings in remunerating medical service and to help the profession in its firm determination to refuse medical attendance on club terms to men who are no longer poor enough to need such accommodation. The profession has no wish to interfere with the right of the friendly societies to admit whom they please to their membership, but it has a most decided right, and it is determined to act upon it, to refuse to allow these societies to impose on its members the duties of attending rich men on terms only tolerable in the case of those who are not rich. These societies go beyond their function altogether when they claim to destroy medical practice and, by a side wind, to degrade its conditions. One of the measures resolved on at the conference seems to show that the Friendly Societies' Medical Alliance is very unfit to advise its constituents as to the best means of restoring the harmony between the societies and the profession. Our readers will scarcely believe that it was actually proposed to ask Parliament to grant medical diplomas to medical students to act as medical officers to the associations. We grant that the terms of the association are only fit for students and not for qualified practitioners. But Parliament is not likely to allow HER MAJESTY'S subjects to be experimented on by students even to please the friendly societies.

The only other practical outcome of the conference seems to have been a determination to appeal to the General Medical Council. It is noticeable that the Medical Defence Union has undertaken, if well-proved cases of touting can be supplied to them, to bring them under the notice of the General Medical Council. This shows that the appeal to the General Medical Council may not be the one-sided thing contemplated by the conference. In the end Mr. Alderman DICKINSON of Lincoln and Mr. WILLIMENT of Norwich were appointed to seek an interview with the General Medical Council. Whether the Council, on such an appeal, will adhere to the view that such questions are not for its decision we cannot say. There

is more to be said for the Council's interference here than has yet been said. Be this as it may, the profession is roused as it has never been before to perceive the pits into which it is being dragged, and, apart from its ethical Authorities, is showing a determination to defend itself which cannot be too much praised. We are pleased to think that our Special Commissioner has contributed such valuable material for a fair public and professional opinion on this subject.

RECENT events have served to attract a large amount of attention to the racial and political problems of South Africa. It may not be inopportune if we take occasion to point out some of the leading features of that country from the health point of view and its attractions for the immigrant who is compelled by personal considerations to take account of climate in his selection of his future home. There is no doubt that South Africa is in these regards a favoured region and that it affords many suitable resorts for invalids, especially the sufferer from pulmonary affections, and also numerous districts where the British race can attain a high level of vigour and fertility. Many of the pests of Europe and the western world—e.g., hydrophobia, yellow fever, &c.—are here unknown, and the general climatic conditions are highly favourable to an out-door life of healthful activity. Malaria, which is such a curse to the littoral regions of Western and Eastern Africa, is much less prevalent in the southern portions of the great continent and in a large part of the interior is practically unknown. It is a most fortunate circumstance that so much of the interior of South Africa is an elevated plateau, as the elevation serves most materially to mitigate the heat which otherwise would render the country as unsuitable for extensive European settlement as the great plains of India.

The configuration of South Africa has been compared to an irregular flight of four steps, the first consisting of the coast plateau, with an elevation of about 600 feet; the second of the southern karoo, elevation about 1200 feet; the third of the central karoo, elevation about 2500 feet; and the fourth of the northern karoo, elevation 4000 feet and upwards. The climatic characters of these four regions necessarily present considerable diversity. The coast plateau is on the whole warm and moist. The rainfall on Table Mountain ranges from fifty-four to seventy-eight inches per annum, and the average for the whole Cape Peninsula is forty inches. Rain falls chiefly in the winter months, from April to September, the three hottest months—viz., January, February, and March—being almost rainless at Cape Town. On the east coast, however—at Durban, for example,—most rain falls in summer, and this is also the rule in the interior, where the winters are usually dry and clear, with slight frost in some localities. None of the places on the coast plateau enjoy a very high repute as health resorts, and as a broad rule the invalid—especially the *poitrinaire*—should be advised to avoid the coast and seek some of the elevated localities of the interior. The southern karoo presents a decided contrast to the coast plateau. The climate here is on the whole dry, with considerable oscillations of temperature and a greater contrast of season. The well-known health resort Ceres, distant about fifty-five miles from the coast and at an elevation of 1493 feet, may be taken as a good example of the climate of the southern karoo. The mean maximum temperature ranges from 58° F. in July to 85° in February, and the mean minimum temperature from 34° in July to 55° in January. The mean relative humidity is 75. The rainfall, though large—viz., forty-one inches—is chiefly confined to the winter months, and the total number of wet days in the year—viz., sixty-eight—is small. The central or great karoo extends east and west for a distance of about 350 miles, at an elevation of from 2000 to 3000 feet above the sea. Here we are in the region of drought, the rainfall varying from about ten inches in the west to eighteen in the east, and in summer these vast plains present a desolate appearance. The hottest month is January, with a mean maximum of 87°, and the coolest is July, with a mean minimum of 36°. The winters are bright and clear, with cold nights, and snow sometimes lies for a time upon the mountains. The air is very pure and dry, and although dust-storms are not infrequent the atmosphere is comparatively still, especially in winter. Among the best-known resorts in this region are Beaufort West and Matjesfontein. The northern karoo—of which the elevation varies from 2800 to 6000 feet—stretches to the Orange River and has an extremely dry climate, the rainfall in some parts being as low as two inches and the general average being about ten inches. Thunderstorms are frequent in summer, the extremes of temperature are considerable, and in winter severe frosts are not unknown. On the whole the winter climate is very agreeable; bright, clear, sunny, bracing days, with just a touch of frost in the air, being very frequent. The chief resorts on the northern karoo are Cradock, Queenstown, Tarkastad, and Aliwal North. The Transvaal, about which so much has recently been heard, is an elevated plateau with a very healthy climate; Pretoria is at an elevation of 4500 feet above sea-level; and Johannesburg is at an elevation of 5600 feet. In spite of this elevation the summer heat in these places is very great and dust-storms are frequent. Malaria is common in some parts of the Transvaal during the hot rainy season; nevertheless, the climate in general must be pronounced healthy and favourable to Europeans. It is probably less favourable for pulmonary cases than the districts already mentioned in Cape Colony.

The practical deductions from the above facts are not difficult to draw. South Africa is one of the best regions in the world for suitable cases of incipient or chronic stationary phthisis, but much care is necessary in the choice of locality. The fairly vigorous patient will there find a climate presenting an unusually large proportion of dry, sunny, bracing days and ample facilities for out-door exercise and sport. The drawbacks to the country are the inadequate accommodation—especially as regards hotels and sanatoria,—the monotony of diet, and the temptations to *ennui*. Railway facilities are being rapidly developed, and the country is being opened up in a way that promises to make it in the future much more tempting to the traveller for health than it has been in the past. Still, South Africa must for the present be recommended only to the robuster type of patients, especially to those accustomed to travel and not averse to roughing it when necessary. The cases most likely to be benefited are incipient or chronic stationary

phthisis, impaired convalescence after operation or acute disease, "struma," anæmia, rheumatism, some varieties of dyspepsia, some varieties of bronchitis and asthma, and Bright's disease. Dr. LAING GORDON'S paper in THE LANCET of Feb. 29th contains some useful information and confirms the favourable reports of other observers regarding the value of the South African highlands in the treatment of phthisis.

MR. LECKY'S recent work on "Democracy and Liberty" exhibits all the great qualities which have characterised his other contributions to our literature. Extensive scholarship, wide sympathies, philosophic breadth, great charm of style, courage, and candour,—these are the historian's well-known characteristics, and they have rarely, if ever, been more evident than in the work in question. Its subject matter is, however, to a large degree eminently controversial, and no doubt the writer's line of thought and argument will provoke much comment and not a little dissent. The political side of the many important questions dealt with by Mr. LECKY lies outside our province, but we may fairly draw the attention of our readers to the noble tribute paid in more than one passage to the great benefits conferred during the present century on humanity by the workers in the field of sanitary reform and pathological research. "The great work of sanitary reform," says Mr. LECKY, "has been perhaps the noblest achievement of our age, and, if measured by the suffering it has diminished, has probably done far more for the real happiness of mankind than all the many questions which make and unmake Ministries." Workers in this field of endeavour have often reason to complain that their work is done in secret, and that though it shows its fruits in a reduction of mortality, an increase of the average length of life, of the working power of the community, and of the general sum of human happiness, it wins but small recognition and is too often taken simply for granted. It is no small satisfaction to find perhaps the greatest of our historians fully alive to the great part played by sanitary reformers in the general progress of the age. "Among the many addresses that were presented to the QUEEN in her jubilee year," continues Mr. LECKY, "none appeared to me so significant as that which was presented by the sanitary inspectors, summing up what had been done in England during the first fifty years of the reign. They observed that the general health of HER MAJESTY'S subjects had advanced far beyond that of any great state of Europe or of the United States; that the mean duration of life of all the QUEEN'S subjects had been augmented by three and a half years; that in the last year's population of England and Wales there had been a saving of 84,000 cases of death and more than 1,700,000 cases of sickness over the average rates of death and sickness at the beginning of the reign; that the death-rate of the home army had been reduced by more than half and the death-rate of the Indian army by more than four-fifths." It is extremely satisfactory to have these facts put so prominently forward and to have such an ungrudging tribute paid from such a source. Mr. LECKY has no sympathy with those sentimental faddists who think that in these days of triumphant democracy no compulsion should be used to secure the general adoption of hygienic precautions. "The real justification of the law imposing compulsory vaccination on an unwilling subject," he justly remarks, "is not that it may save his life, but that it may prevent him from being a centre of contagion to his neighbours. In all legislation about drainage, pollution of rivers, insanitary dwellings, the prevention of infection, and the establishment of healthy conditions of labour, spasmodic and individual efforts, unsupported by law, will always prove insufficient. As population increases and is more and mor massed in large towns; as the competition for working men houses within a limited area grows more intense; as industry takes forms which bring great numbers of working men and women under the same roof; and as multiplying schools increase the danger of children's epidemics, the need for coercive measures of sanitary regulation becomes more imperious." These principles are to the members of the medical profession simply self-evident, and it would save an immense waste of time, labour, writing, and talking if they were universally attended to and if ignorant people would refrain from giving vent to crude opinions regarding subjects which they have never seriously attempted to master.

Mr. LECKY is no less generous when he comes to comment upon the singularly modest rewards which have been bestowed upon the most distinguished representatives of medical science and sanitary reform. We trust the following noble and eloquent passage will be duly pondered "by all whom it may concern." We could not wish to have our case more forcibly or more adequately stated. "Closely akin to science, and perhaps even more important among the elements of national well-being, are the great healing professions. Here, too, our century ranks among the most illustrious in the history of the world. It has seen the discovery of anæsthetics, which is one of the greatest boons which have ever been bestowed upon suffering humanity. It has produced the germ theory of disease, the antiseptic treatment in surgery, a method of removing ovarian tumours which has successfully combated one of the most terrible and most deadly of diseases, a method of brain surgery which has already achieved much, and which promises inestimable progress in the future. It has vastly extended our knowledge of disease by the invention of the stethoscope, the clinical thermometer, the laryngoscope, the ophthalmoscope, and in many other ways which it is not here necessary to enumerate England may justly claim a foremost place in this noble work, and many of her finest intellects have been enlisted in its service. In no single instance has this kind of eminence been recognised by a peerage. It is clearly understood that another and lower dignity is the stamp of honour which the State accords to the very highest eminence in medicine and surgery, as if to show in the clearest light how inferior in its eyes are the professions which do most to mitigate the great sum of human agony to the professions which talk and quarrel and kill." We conclude by quoting the following closely adjacent passage, the weighty words contained in which need no comment from us: "In 1896 for the first time a peerage was conferred on an English artist. The doors of the Upper House were never opened to the men who in this century have rendered the greatest services to the State and to humanity—to SIMPSON, whose discovery of chloroform has prevented an amount

of human suffering which it would need the imagination of a DANTE to realise; to STEPHENSON, whose engineering genius has done more than that of any other man to revolutionise the whole economical and industrial condition of England; to CHADWICK, the father of the great movement of sanitary reform which has already saved more lives than any, except perhaps the very greatest, conquerors have destroyed; to DARWIN, who has transformed our conceptions of the universe and whose influence is felt to the farthest frontiers of speculative thought. For their own sakes it is not to be regretted that the claims of such men were not thrown into humiliating competition with those of the acute lawyers and politicians, the great country gentlemen and the opulent brewers, who throng the approaches of the Upper House; but if such a House is to continue, and in a democratic age is to retain its weight and influence in the State, it is not likely that elements of this kind can for ever be neglected."

Annotations.

"Ne quid nimis."

THE SECOND READING OF THE MIDWIVES BILL.

THOSE who deprecate haste in dealing with the various Bills for saving the lives of puerperal women attended by ignorant and incompetent women calling themselves midwives may be reassured. Mr. Balfour has given pretty plain notice that even Wednesdays are not to be free for the discussion of Bills brought in by private Members. Even apart from this circumstance, and although the subject has been under the notice of Governments and of the General Medical Council for twenty years, there is much to be said for a year's delay. Of three or four proposals for dealing with this subject only one is before the House, and the Bill in question ignores most of the suggestions of the General Medical Council. Under these circumstances, while profoundly convinced of the need for some protection to poor lying-in women, we cannot but think that the Legislature will be well advised in waiting another year till the other measures with the same object are before the House and before the General Medical Council.

THE VACCINATED ANTI-VACCINATIONISTS OF GLOUCESTER.

FOR their own sakes, as well as for the sake of the community generally, we are glad to learn that many of the anti-vaccinationists of Gloucester are getting themselves vaccinated; but it is well to remember that were it not that these people had already been vaccinated in infancy there would probably be no anti-vaccinationists at all. The protection afforded by an original primary vaccination in infancy, though diminishing with advancing years, still affords some definite protection for a large majority of persons during non-epidemic periods; and hence it becomes very easy for the vaccinated anti-vaccinationists to decry vaccination when there is not much small-pox about and then to retire into comparative quietude and even get vaccinated when an epidemic phase of the disease sets in with intensity. At the present moment Gloucester exhibits two groups of anti-vaccinationists. One group—comprising people who are few and far between—is represented by the guardian and town councillor who recently stood up in a public meeting and announced that he had been in error, that he had become "converted" by what he had seen, and that he had been vaccinated in consequence. The other—and persons in this group are in the majority—includes those who have been vaccinated quietly and without any open confession of "conversion," some even seeking vaccination in distant places rather than make confession of their error. But Gloucester also exhibits a hybrid between these two in the person of the editor of the newspaper which has taken the lead in anti-vaccination articles. This editor has issued a public letter, which is extremely humorous, in which he announces that he has been "influentially urged" to get vaccinated, and hence he has sacrificed his "personal convictions" in the hope of contributing to "the public good." His vaccination is doubtless—as it nearly always is with anti-vaccinationists—a revaccination, and his public announcement is held by him "as sufficient excuse for my seeming inconsistency." We can assure him that he is in no way inconsistent in his humour. Like others of his class he is frightened of small-pox when it comes near him and he has submitted himself to inoculation by "the disease called by the name" vaccination, and now he can be pretty sure of retaining in redoubled force a protection which he doubtless had partially before. We have assumed that the editor is full of humour in his public letter, for we cannot for one moment assail the intellects of the people of Gloucester to whom his letter is addressed by thinking that they can possibly take him seriously.

COVERING IN THE LEGAL PROFESSION.

THE law is very severe against any solicitor who forms an alliance with an unqualified person in the way of partnership and for joint benefit. Such a case heard before the Queen's Bench Division will be found reported in the *Times* of Thursday, April 23rd last, headed "In *re* a Solicitor—*ex parte* the Incorporated Law Society." The solicitor was charged with a breach of the 32nd Section of the Solicitors Act, 1843. The motion was to strike the solicitors name off the rolls. Complaints were made by clients who employed the respondent as solicitor that the person who conducted the business was one Gillard. The respondent stated in defence before the committee of the Incorporated Law Society that the arrangement with Gillard was to pay him £2 10*s.*, and that while he was kept at home by business Gillard had managed the common law branch of his business for him. Mr. Jelf, Q.C., in defending, also pleaded that even if there was partnership it did not matter unless the business was carried on for the sole benefit of the unqualified person. The committee which reported found no entry of the payments described, that the relationship between the respondent and Gillard was not that of principal and clerk but of partners, and that the offence against Section 32 of the Solicitors Act had been committed. Mr. Baron Pollock said it was most important that the client should know who was the responsible solicitor, and the Court made the order moved for and the solicitor's name was ordered to be struck off the Rolls.

MEDICAL DIAGNOSIS.

IT does not very often happen that we are able to present to our readers a communication by one whose medical experience includes recollections of more than fifty years' active work in the profession. It is therefore with pleasure that we publish to-day the address given to the North London Medical and Chirurgical Society by the retiring president. Mr. Charles King is to be envied in that he possesses not only the recollections of his first period of clerkship under Dr. Addison more than fifty years ago, but also the experience which he has been able to gain by taking recent advantage of the still great opportunities afforded by his old hospital as a school of medicine. We must admit, however,

to having experienced a slight feeling of disappointment in perusing Mr. King's admirable address. An experience which goes back to the time when all the apparatus required by his clinical clerk to convince Dr. Bright or Dr. Addison that a specimen of urine contained albumin was a "candle and a spoon," and which is also able to put before an audience the fact that a "Roentgen skiogram" is produced as evidence of injury to the foot in a court of law under the discriminating guidance of Mr. Justice Hawkins, must be of the most interesting character; and an account of that experience, when its possessor has the facility for entertaining description and narrative of the retiring President of the North London Society, would prove most instructive. The recent advance in "shadow photography" is not that, however, on which Mr. King laid the greatest stress when contrasting the days of his studentship and the present time from the point of view of accuracy in diagnosis. The diagnostic instrument which he makes most prominent among the rest is no doubt the microscope. Whether this instrument is considered as an aid to the surgical diagnosis of tumours, or from the point of view of the examination of obscure affections of the genito-urinary tract, or as a necessary adjunct to the numerous bacteriological examinations which are becoming more frequently practised every day, or as indispensable in a multitude of other diagnostic investigations, it is the microscope and clinical microscopy which have done most to make advance possible; and in this opinion all will agree with Mr. King.

CROSSED KNEE-JERK.

IN the *American Journal of the Medical Sciences* for March Dr. Risien Russell has an interesting paper on this subject. Some time ago Dr. Hinsdale and Dr. Madison Taylor offered an explanation of the occurrence of this phenomenon as a result of a centripetal impulse producing activity of one cortical motor area which in turn stimulates the corresponding portion of the other hemisphere and produces a contraction of the adductors of the thigh opposite to the one originally struck. Dr. Russell carried out certain experiments with the view of testing this hypothesis, using dogs and rabbits for the purpose. In the first set he divided the corpus callosum, but even after this procedure, when an active state of the knee-jerks was induced by a certain degree of asphyxia, it became possible to elicit beyond all question the crossed knee-jerk. Further, in order to test whether the cerebrum was concerned at all in the production of the crossed knee-jerk the spinal cord was completely divided transversely in the dorsal region. In the course of a week well-marked exaggeration of the knee-jerks ensued, and it was also possible to evoke, not only a crossed knee-jerk, but a greatly exaggerated cross-jerk. Another effect was sometimes observed—viz., that a blow on the distal end of the femur or proximal end of the tibia was followed by contraction of the opposite adductors of the thigh and extensors of the knee, while there was no response in the extensors of the side on which the blow was delivered. This phenomenon is not explained; the fact is merely recorded. Dr. Russell next traverses Dr. Hinsdale and Dr. Taylor's views of the nature of what has somewhat unfortunately been named reinforcement. These writers regard this phenomenon as resulting from irradiation of motor impulse from the active centres to other similar centres, so that they and their related muscles acquire a heightened responsiveness to external stimuli. Dr. Russell points out, however, that any voluntary motor impulse directed to the muscles on whose contraction the knee-jerk depends diminishes the possibility of eliciting the phenomenon. And he mentions that in using the Jendrassik method the extensors of the knee are sometimes brought into action, and this, instead of increasing the knee-jerk, renders it difficult or impossible to obtain. Dr. Russell believes with others that the spinal centres are normally under a certain degree of restraint by cerebral centres, and that what is called reinforcement is really removal in some degree of this inhibition, a removal which may be effected by diverting the patient's attention to some other act. Removal also of one hemisphere in an animal causes increased activity of the opposite knee-jerk. Further, the return of the knee-jerk in Kramer's case of progressive paresis, which was quoted by Dr. Hinsdale and Dr. Taylor in support of their views, Dr. Russell accounts for by supposing the inhibition lessened as a result of progressive cerebral degeneration, so that there comes a time when the spinal centres are so far freed from inhibition that the few remaining fibres in the posterior columns are sufficient for the purpose of carrying a stimulus which was formerly ineffective because of the inhibition from above, and as illustrating the same point he quotes a case published by Dr. Hughlings Jackson and Dr. James Taylor of a man suffering from tabes in whom the knee-jerks returned after an attack of hemiplegia.

THE SALE OF DISEASED MEAT.

A CONVICTION was successfully obtained last week against a dealer for selling meat which was wholly unfit for human food. In many cases of this kind there are various technicalities which often cause some difficulties in getting a conviction, but in this case the whole affair seems to have been so barefaced that there was, as Mr. Alderman Samuel remarked, practically no defence. The farmer to whom the cow had belonged stated that as the animal was unable to stand he sent for the defendant to take it away, receiving nothing for it as it was quite useless to him. The defence was that the meat appeared quite healthy when it was dressed, but Dr. Sedgwick Saunders thought its diseased condition must have been quite apparent, as when he examined it he found it saturated with tubercles, soft and unhealthy, so that its consumption would have been attended with immediate danger to life. Previous convictions having been proved against the accused he was sent to prison for three months without the option of a fine.

THE CEMETERY AND THE WATER-SUPPLY.

PETRIFYING springs, the waters of which are so highly charged with lime salts or silicates as to infiltrate and encrust objects suspended therein for some time, are known in most countries, but their relation to the question of earth burial has, we believe, never presented itself until this year. We learn, however, from a German paper that excavations made with the view of ascertaining whether a portion of the churchyard at Löbau laid out in 1870 was ready for renewed interments revealed the fact that the coffins were intact and completely petrified. On being broken open they were found to be full of water and the corpses were sodden but hardened, though they had undergone a certain amount of putrefaction, pungent gases escaping as the coffins were opened. The surface soil was a heavy, impervious clay, beneath which was a water-bearing zone in which the bodies lay. In this instance the water affected them, but had it been of an ordinary character they might have dangerously affected it, the exclusion of air and the absence from the "dead" clay of the bacteria of nitrification having prevented any decomposition in the strict sense as distinguished from putrefaction. Thus, when part of the churchyard of St. Andrew's, Holborn, was excavated for the construction of the viaduct the bodies were found "sandwiched," to use the apt expression of Dr. S. Gibbon, the medical officer of health, between the boards of the coffins,

crushed by the superincumbent weight of clay; but from the "deadness" of wood and clay decomposition and disintegration had been very slow, and there was but little difference between the state of preservation of those interred 200 years ago and of those buried twenty years previously, when the graveyard was closed. Under such circumstances—that is, in non-nitrifying and therefore unsuitable soils — the pollution of the ground-water is inevitable, and though the danger to the public health is minimised by the provision of public water-supplies from distant sources it is a serious matter when the population depends on private wells. Thus at Vienna, previously to the inauguration of a public supply from the highlands, the effects of the pollution of the ground-water gravitating from the cemeteries encircling the city on higher elevations were unmistakable. The water in the town wells became progressively more and more contaminated until it was turbid, yellow, charged with nitrites, and finally redolent of sulphuretted hydrogen and ammonium sulphide—in fact, absolutely unfit for any use. Yet clay lands, possibly from their lower price, seem to be generally chosen for cemeteries; all those around London with very few exceptions, being of this description, though in some places good gravelly sites might have been found within a mile of those unfortunately selected. At Finchley the soil, though not gravel, appears likely to possess active nitrifying properties, being of a soft, friable, loamy character.

BERI-BERI IN THE FIJI ISLANDS.

A VALUABLE contribution to the natural history of beri-beri is contained in the recently issued official reports on an outbreak of the disease which occurred in the year 1894 in the British colony of Fiji. All the patients were Japanese coolies, of whom about 300 were imported for the purpose of working on sugar plantations. Their ages varied from eighteen to thirty years, and they arrived in the colony on April 27th, 1894. It was understood that they were all medically examined in Japan, and on landing in Fiji they were, with few exceptions, a fine body of men, but during the first month of their employment, which was chiefly cane-cutting and draining newly-cleared land, there was a good deal of sickness among them, mostly malarial fever and diarrhœa. The first hospital case of beri-beri was admitted on May 30th; in the month of July at least seventeen of the men complained that they were suffering from kakke, the ordinary name for beri-beri in Japan, where it is well known to be endemic; and in the middle of November there were more than 220 cases. There were in all 268 Japanese known to be attacked, of whom 65 died, and in February, 1895, the whole of the survivors were sent back to Japan. The disease was entirely confined to these immigrants, not spreading either to the Indian labourers who worked on the same plantations with them or to the Fijian inhabitants of the villages. The Japanese were lodged in well-ventilated houses, all of which (with one exception) were constructed of wood and were spacious enough to allow at least 330 cubic feet to each occupant. After their departure these buildings as well as the hospitals were washed with a solution of corrosive sublimate of the strength of 1 in 1000, to which strong hydrochloric acid was added. Two days later the buildings were well washed with hot water and soap and left open for a week, after which the washings with corrosive sublimate and soap-and-water were repeated. They were then occupied by Indian coolies among whom no cases of beri-beri appeared during the eleven months that elapsed up to the date of the report. The colonial medical officers devoted much attention to the relations existing between beri-beri as it appeared in this epidemic and other diseases which either simulate it or have passed under the same name. They conclude that it is independent of scurvy, pernicious anæmia, or ankylostomiasis and that it is a specific neuritis affecting the motor and sensory nerves, peripheral at first, but afterwards involving muscles and vital organs supplied by the sympathetic system. It causes death either by paralysing the heart and respiratory muscles or by choking the lungs and other viscera with the œdematous effusion to which in one class of cases it gives rise. The most usual preliminary symptoms were a feeling of heaviness and weariness in the legs, numbness of the calf muscles, slight œdema over the crest and inner surface of the tibia, loss of appetite, giddiness, headache, shortness of breath, palpitation, rapid pulse, and digestive disorders. With respect to the motor paralyses, the calf muscles were generally first affected, then the peronei and the flexors of the feet and toes. The muscles of the hands and fingers were usually the next group affected. As a rule the patellar reflex was early impaired and with the progress of the disease wholly suppressed, some cases, however, with well-marked motor impairment exhibited good patellar reflexes and in some the reflex was exaggerated. Cutaneous anæsthesia was constantly present over the calves, the ankles, and the dorsa of the feet, accompanied by pain in the deeper parts when firm pressure was made. In a few cases very small rod-shaped bodies were observed in the blood, but cultivation experiments were unsuccessful. The reports were printed at the Government press in Suva and submitted to the Colonial Government last January; they refer several times to articles which appeared in THE LANCET in 1881, 1886, 1887, 1890, and 1893, as well as to the former prevalence of beri-beri in the Japanese navy and its eradication as a result of dietetic improvements.

"SÆVÆ NOVERCÆ."

TWO particularly brutal step-mothers were alluded to under the above heading in THE LANCET of April 4th. The county bench at Hastings on April 18th supplied a most salutary sequel to one case. It will be remembered that a married woman named Edith Batt was severely censured by a jury who investigated the cause of death of a seventeen-months' old child, her step-son. The case has been taken up by the National Society for the Prevention of Cruelty to Children, and the woman was charged before the magistrates with having cruelly ill-treated the deceased child. The evidence was most revolting. One neighbour swore that prior to the defendant's arrival the child was fat and healthy. She had, she said, heard Batt say, "Die, you little ——! I should like to have your insurance money for a spree!" Injuries which she had noticed on the child's eye, arm, and leg were put down by the woman to accidental causes; and on another occasion Batt said to the child, "I wish you would die—you are a misery to yourself and everyone else." Another woman, a lodger, said she had frequently seen the child cruelly treated by frequent slapping and by being dashed upon the floor. Defendant, she said, held the child by the clothes behind and dashed him face downwards on the floor, which was of wood covered with oilcloth. This took place every day, but "she was not in the habit of interfering with other people" and so said nothing. This witness's daughter said she had seen Mrs. Batt push food into the poor child's throat until he began to choke, and that she had seen her slap the boy in the face while tied to a chair until blood flowed from the mouth. A fourth witness said the woman told her she hated "the little ——" and wished he was dead," and after the inquest Batt had admitted "I have slapped him and would slap him again if he was alive." Mr. F. J. Lewis, St. Leonards, said death was due to localised meningitis caused by a blow on the skull. There were an injury on each side, bruises on the cheek, buttocks, and abdomen which must have been caused by direct violence and numerous

other injuries. The child had been insufficiently fed for some time before his death. Dr. T. P. Harvey, who assisted at the necropsy, agreed. The defence to all this was a denial of cruelty and allegations of spite and ill-feeling against the chief witnesses. The magistrates, however, thought it was a case of great and gross cruelty and sent the woman Batt to hard labour for six months.

THE NOTTINGHAM SCHOOL BOARD AND MEDICAL CERTIFICATES.

THE *Nottingham Daily Guardian* of April 18th, 1896, in its report of the proceedings of the Nottingham School Board relates that the following resolution was passed by the board by a large majority—10 votes to 2:—"That in all cases of illness being assigned as reason for absence of scholars and of a medical certificate being required to substantiate such excuse the board shall pay for the medical certificate requested." The Nottingham School Board has set an example of justice in this matter which cannot be too soon followed by all school boards.

CATERPILLAR ERYTHEMA.

ATTENTION has been directed by the interesting correspondence in these columns[1] to the occurrence of erythematous and urticarial rashes in susceptible individuals after handling certain hairy plants—primula obconica and sinensis. It seems that in these unlucky persons the sting of a primula is followed by unpleasant cutaneous results just as a painful rash is caused in everyone by brushing against the hairs of a stinging-nettle. It is well, therefore, for the practitioner to bear this cause in mind when dealing with cases of erythema on the hands and parts of the body accessible to the hairs. There is another very common cause which must also be borne in mind when the patient is a schoolboy or an entomologist. Many of the common hairy caterpillars in this country when handled "sting" with their hairs just as the nettle and primula do. The hair penetrates some layers of the skin and breaks off, leaving a little piece projecting. If the hand is passed over the face the stumps of hair projecting from the skin stin the face in a similar manner. Soon an intolerable itchin begins, more extensive than the parts actually irritated; vigorous rubbing goes on until in a short time the arms, face, neck, and often chest become covered with a red eruption in which minute nodules can be detected. The hairs and the poison may even be transferred (as Mr. Lawford has shown in the case of Bombyx Rubi) to the conjunctiva, the hair ultimately becoming encapsuled in a little nodule of fibrous tissue. The rash is often attended with considerable swelling and slight rise of temperature, and, as Dr. Dukes of Rugby pointed out,[2] may lead to an erroneous diagnosis of rötheln. It would be well if medical officers of schools warned the boys of the caterpillars which should not be handled and of the risk they run in rubbing themselves when the skin is irritated. The chief British offenders are the common "woolly bear," the caterpillar of the tiger moth (Arctia caia), and its near relations; almost all the Bombyx group, including the oak eggar, fox moth, drinker and lappet moths; and the Liparis group, including the common "gold tail" and "brown tail." The hair of some foreign caterpillars has much more severe effects. Gangrene has been reported from contact with the hairy Indian Shoa Pokâ, and the Australian Lasiocampa vulnerans is credited with producing fatal results. On the Continent there is a very common caterpillar, the Bombyx processionea, which fortunately does not appear to have reached this country. The erythema resulting from contact with it is followed by severe general symptoms, and in the case of one boy in the south of France, whose case was detailed in THE LANCET,[3] after a number of caterpillars had fallen on his chest while climbing a tree there ensued violent irritation, general swelling, fever, somnolence, delirium, and death in a few hours in spite of energetic medical treatment. Although fortunately we do not meet with such severe cases in this country, the effects are so unpleasant to the victim and the diagnosis is often so difficult for the practitioner that a word of warning to those most likely to suffer will not be superfluous.

[1] THE LANCET, April 10th and 17th, 1896.
[2] THE LANCET, Oct. 29th, 1881.

MANCHESTER NIGHT ASYLUM.

AMONG the lesser Manchester institutions this fulfils a useful and beneficent purpose. As the report read at the annual meeting the other week says: "There always exist, and will continue to exist, numbers of people out of work who are at times too poor to pay even for a night's lodging and who, rather than go to the workhouse wards, would prefer to stay all night under any shelter, however comfortless. These people are not paupers and do not wish to be pauperised, they are seeking work, and with that object come to and pass through our large towns." It is mainly to help such people with a night's lodging that this institution exists. It can give through the winter months, from October to March inclusive, "a warm and comfortable lodging, and fire and food, to one hundred and fifty people." Comparatively few women make use of it, perhaps because it is not so well known as it ought to be that there is a separate room for women, and partly because fewer women than men lead the wandering life often forced upon the latter by want of work. Last year 4702 persons were relieved. This can be done with an income of £200 a year, but from the deaths and removals of old subscribers an appeal for more funds has become necessary. At the end of the year the institution was in debt to the treasurer to the amount of £70.

"NATURE PLEASURES IN A RIVERSIDE GARDEN."

WE have on several occasions referred with pleasure to the papers which Mr. W. J. C. Miller, the registrar of the General Medical Council, contributes from time to time to "Nature Notes." Richmond-on-Thames is a little less than ten miles out of London, yet if we did not know the *locale* of the garden about which Mr. Miller discourses[1] we should be inclined to think of it as at least five times that distance from our smoky metropolis. The mere mention of evening primrose and clematis in Mr. Miller's picturesque language is refreshing to the weary town-dweller and the author evidently extracts from the contemplation of them a pleasure and delight which all must envy. Amongst feathered life too he is quite at home, and the stately birds which inhabit certain parts of our great river and which the poet addresses at eventide—

> "Day is dying; float, O swan, along the ruby river,
> Requiem chanting to the day; day, the mighty giver."

must call to mind, as they slowly drift past the garden, Wordsworth's lines:

> "The swan on still St. Mary's Lake
> Floats *double—swan and shadow!*"

Nowhere, says the author, can be better realised the song which Tennyson phrases:

> "Summer is coming, summer is coming, I know it, I know it, I know it;
> Light again, leaf again, life again, love again: 'Yes, my wild little poet.'"

And the life and songs of other birds in his garden are described in sympathetic and felicitous language. Such simple pleasures as these, which can be obtained by

[3] THE LANCET, July 26th, 1862.
[1] Reprinted from Nature Notes, April, 1896.

quiet contemplation of nature, cannot but help vastly to repair the waste of energy entailed by a busy life in an overcrowded metropolis rendered hideous by the discordant pandemonium to which we have long called attention. Such pleasures cost nothing but the training of an observing eye. The benefits, both moral and physical, are of untold value.

VACCINATION IN IPSWICH.

IT must be somewhat trying to the self-respect of boards of guardians, whose duty it is to enforce the Vaccination Acts, to be reminded of their responsibility, and perhaps even of their neglect, by sanitary authorities. Yet this has occurred over and over again the latest instance being at Ipswich last week, when the Public Health Committee of the Corporation, alarmed at the neglect of vaccination in the borough, considered it their duty to draw the attention of the guardians to the risk occasioned to the inhabitants of Ipswich by the presence of a large number of unvaccinated children. At the meeting of the guardians when this communication was brought forward Mr. Preston Thomas, one of the general inspectors of the Local Government Board, in answer to a guardian, who was evidently somewhat misinformed, put before them some of the arguments in favour of vaccination, and it is to be hoped that his words have not fallen upon absolutely stony ground. Mr. Thomas estimated from the vaccination returns that there were in all probability some 5000 unvaccinated children in Ipswich, and he pointed out that the presence of this inflammable material was a serious matter to those responsible for its existence. He observed that it was hardly to be expected that ignorant and careless parents would have their children vaccinated unless they were compelled to conform to the provisions of the Acts, which, he reminded the guardians, have neither been repealed nor suspended. We are glad to see, too, that one of the members endeavoured by a reference to the Gloucester calamity to impress upon the guardians the commercial aspect of neglected vaccination, and insisted that if an outbreak of small-pox occurred among the infantile population of Ipswich the guardians would be mainly responsible for it. We wonder how many of the Ipswich guardians have taken the trouble to study the question of vaccination or how many of them possess a copy of the Vaccination Acts? It is lamentably suggestive that the administration of the Vaccination Acts should be entrusted to a body who have to be reminded of their duties by the Public Health Committee of the corporation. Let us trust the warning may not be too late.

DEATHS UNDER ANÆSTHETICS.

AN example of this form of death is afforded by the loss of a patient at the Yarmouth Hospital the particulars of which have been kindly sent us by Dr. K. W. Monsarrat, the house surgeon. A man aged sixty-three applied for relief from urgent dyspnœa arising from pressure upon the larynx due to carcinomatous glands causing constriction. The primary cancer of the tongue had been successfully removed ten months previously. Owing to the laryngeal stenosis the man had several times been nearly asphyxiated. Tracheotomy was decided upon and chloroform was accordingly administered from a towel. The man went under in about four minutes, taking the anæsthetic well. As a preliminary to the operation the head was extended, a sandbag being placed under the neck. Dyspnœa at once increased, the face became cyanosed, and in a few seconds respiration ceased entirely. The operation was rapidly proceeded with and then artificial respiration was practised. The patient never rallied. Respiration ceased thirty seconds before the heart stopped. The operation not being one of emergency the anæsthetic was deemed advisable. Death was "due primarily to sudden paroxysm brought on by forcible alteration in the position of the neck and only secondarily to the anæsthetic." We are not told whether the faulty posture was at once rectified before the operation was proceeded with. Similar conditions arise in operations undertaken for the relief of goitre and have caused grave consequences. A very similar case is reported from Warrington. Unfortunately the particulars supplied are quite inadequate. The patient, a man aged sixty-three, applied for relief at the infirmary at Warrington. He had suffered from carcinoma of the throat for two years, and presumably stenosis had arisen as it was proposed to perform tracheotomy. The junior house surgeon gave chloroform. The quantity used and the method employed are not mentioned nor are any particulars given as to the symptoms which appeared. We are simply told that when the operation was commenced respiration ceased. The medical testimony given at the inquest showed, we are informed, that spasm of the glottis was the cause of death. The extreme importance of accurate and thorough accounts of all such fatalities being furnished to the medical press is too obvious to need to be dilated upon, and we regret that we have not received fuller details.

THE National Society for Aid to the Sick and Wounded in War has sent out two surgeons to Bulawayo to assist in the care and treatment of the wounded. The gentlemen selected are Mr. W. Greenwood Sutcliffe, F.R.C.S., and Mr. W. Redpath, M.R.C.S. Eng., L.R.C.P. Lond. Both of these gentlemen have been house surgeons at one of our largest metropolitan hospitals, and the former has also been house surgeon at the Hull Infirmary. They have taken with them a large supply of medical necessaries, including antiseptic dressings, &c., and will proceed to Bulawayo as rapidly as possible. They left Southampton by the s.s. *Moor* on Saturday last.

THE executive committee of the National Society for Employment of Epileptics announces that the foundation-stone of the Home for Women will be laid with Masonic honours by the Right Honourable Lord Addington, Provincial Grand Master of Buckinghamshire, assisted by the officers of the Provincial Grand Lodge, on Tuesday, May 26th, at 4.15 P.M., at the Colony, Chalfont St. Peter. A train leaves Baker-street at 2 29 for Chorley Wood Station, and carriages can be provided at the station for those who accept invitations prior to Thursday, May 21st. Reply should be made to the Secretary, 12, Buckingham-street, Strand, W.C.

A CONVERSAZIONE will be given by the Medical Society of London on Monday, May 18th, at the rooms of the society, 11, Chandos-street, Cavendish-square, at 9.15 P.M. The Oration will be delivered by Dr. W. H. Allchin on "The Breaking Strain" at 8.30 P.M. Music by the "Bijou" orchestra will be provided and smoking will be permitted at 10 o'clock.

THE third International Congress of Psychology will meet in Munich from Aug. 4th to Aug. 7th inclusive. The titles of 132 papers are announced already, several of them being by English and American writers. The general secretary is Dr. Freiherr von Schrenck-Notzing, Max Josephstrasse, Munich.

AN application for election as a member of the Pathological Society of London having been received from a duly qualified lady the question of the desirability of admitting female medical practitioners to the society will be submitted to the annual general meeting of the society to be held on Tuesday, May 19th.

WE have received a copy of a reprint of a paper by Dr. Pavy on the Physiology of the Carbohydrates, in which he once more questions the validity of Dr. Noël Paton's criticisms of his work. Dr. Pavy and Dr. Paton have done good service in showing how delicate and intricate is the task of unravelling the important subject of glycogenesis; and although this controversy has been somewhat unnecessarily prolonged the cause of physiology may, we trust, be advanced by the facts that have been brought to light. But that the subject has been finally determined cannot be admitted.

THE medical and surgical staff of the Victoria Hospital for Children, Tite-street, Chelsea, propose to give a course of lectures during the summer session upon the Diseases of Children. The lectures will be delivered in the board-room of the hospital every Thursday afternoon at four o'clock, and each will be followed by a demonstration of cases in the wards. Practitioners and students of medicine are invited to attend.

THE opening lecture of the summer session at the Hospital for Consumption and Diseases of the Chest, Brompton, will be delivered on Wednesday, May 6th, at 4 P.M., by Dr. C. Theodore Williams, on the Arrest of Pulmonary Tuberculosis. These lectures are open to students of the hospital and to all qualified practitioners, and will be continued on each Wednesday during May and June.

AMONG the Rand prisoners sentenced to a fine of £2000, two years' imprisonment, and a subsequent term of three years' banishment are, according to the *Daily News*, several well-known medical practitioners of Johannesburg—Mr. Hans Sauer, Mr. Duris, Mr. Davies, Mr. Mitchell, and Mr. Hillier.

WE have received the following telegram from Surgeon-Lieutenant-Colonel Lawrie:—"Discovered identical swarming Laveran's bodies in ordinary pus cells." We hope in an early issue to place before our readers Surgeon-Lieutenant-Colonel Lawrie's views on Malaria.

DR. ROBERT FARQUHARSON, M.P., is announced to take the chair at the annual dinner, on Oct. 18th of the St. Mary's Hospital Medical School. The introductory lecture will be delivered by Mr. Morton Smale, Surgeon to the Dental Department of the hospital.

THE second reading of the Public Health Bill—i.e., Bill for the abolition of quarantine—is set down in the House of Lords for Friday, May 8th. The second reading is to be proposed by Lord Harris.

H.R.H. THE PRINCESS OF WALES will open the bazaar and fête in aid of the new wing of the West London Hospital, Hammersmith, on Thursday, May 21st.

As we go to press we learn that Sir Frank Lockwood has stated in court that, terms having been arranged in the action of Kitson *v.* Playfair, the appeal will not be prosecuted.

THE ROYAL EYE HOSPITAL.—A dinner in aid of the funds of the Royal Eye Hospital (the Royal South London Ophthalmic Hospital, Southwark) was held on April 21st in the Whitehall Rooms of the Hôtel Métropole. Mr. James Bailey, M.P., took the chair and in proposing the principal toast said that he could speak of the hospital favourably from personal knowledge. Mr. M'Hardy (senior surgeon) responded and donations to the amount of £2059 were announced.

THOMAS WAKLEY,

THE FOUNDER OF "THE LANCET."

A BIOGRAPHY.[1]

CHAPTER XVIII.

The Constitution of the Royal College of Surgeons of England.—A Sketch of its later History.—Wakley's Attitude towards the College.—The Reason for it.—An Outspoken Letter.

THE record of the first ten years of THE LANCET has so far shown itself to be a stormy one. Its publication was, in fact, attended with sufficient turbulence to satisfy even its Editor, whose early management had a good deal of the tread-on-the-tail-of-my-coat spirit about it.

Of the innumerable small quarrels that arose and were threshed out in these columns during this decade it will serve no purpose to speak. They would not be illustrative of anything in Wakley's character left uncovered by the Irish phrase just quoted, nor would they give the reader any particularly correct view of the medical profession of the day. They were but episodes in a contentious career, the border warfare incidental to Wakley's invasion of the privileges of the leaders of the profession. In contradistinction, his fight for the right to print the lectures of hospital surgeons and his determined attacks upon hospital practice when wrongly carried on must be looked upon as organised campaigns. These formed part of his policy of aggression as a reformer; indeed, with the third campaign, a description of which now follows, they constituted the policy by which he fulfilled the promises given in his prefaces to his readers. This third campaign was directed against the Royal College of Surgeons of England.

The most obvious and facile way of making Wakley's attitude towards the Royal College of Surgeons of England perfectly clear and, for that matter, of showing him to have been right in his main contentions would be to narrate the constitutional history of the College from the beginning; for nothing that he asked for had not an excellent historical reason for being granted, and everything that he clamoured against was an abuse of the ancient rights of the general body of the craft of surgery. But it would not be right to claim for Wakley that at the time that he commenced his crusade against the corporation of which he was a member—and so young a member—he knew the sound archæological ground on which he was standing. So far from knowing it, he never inquired into it, and had he been told that all his words and actions were justified by history he would not have considered his basis of operations solidified thereby. He was essentially the practical man, hot-blooded and rash in procedure, maybe, but eminently sensible in his demands. He saw that certain abuses flourished and he desired to cut them down. If history had been on the other side and his opponents had been able to claim for themselves a proud position of antiquarian rectitude he would not have been impressed thereby. He would only have said that times had changed and that it was imperative that the Royal College of Surgeons of England should change with them, putting it, frank Radical that he was, in phraseology that would have been unnecessarily irritating to the reactionary mind; he never would have modified his opinion.

An inquiry into the constitution of the College is hardly within the scope of this biography. All interested,

[1] Chapters I., II., III., IV., V., VI., VII., VIII., IX., X., XI., XII., XIII., XIV., XV., XVI., and XVII. were published in THE LANCET, Jan. 4th, 11th, 18th, and 25th, Feb. 1st, 8th, 15th, 22nd, and 29th, March 7th, 14th, 21st, and 28th, April 4th, 11th, 18th, and 25th respectively.

whether for practical or dilettante reasons, can find scattered up and down the pages of THE LANCET articles and letters upon every conceivable point in the history and working of the corporation, while the late Mr. J. Flint South's work "Memorials of the Craft of Surgery in England," issued after his death under the competent editorship of Mr. D'Arcy Power, is a mine of scattered information upon the subject.[2] Yet a brief recapitulation of certain facts in that constitution must be given in order that the reality of the abuses against which Wakley took the field may be properly comprehended. To do this it will not be necessary to go further back than the dissolution of the old Company of Surgeons. By the Act of 1745 it was enacted that the Master and at least one of the governors should be present at every Court, with one or two ordinary assistants, in order to constitute a quorum. It happened at the meeting held on July 7th, 1796, that in consequence of the death of one governor and the serious illness of the other no legal Court was possible. Notwithstanding this, the Master and some Assistants determined on proceeding to business. This rash action proved fatal to the Corporation. The opinion of counsel was taken, and there was no doubt that the Corporation was destroyed by the illegal construction of the last court. In the following year a Bill was brought before Parliament, at the instigation of the Court of Assistants, to indemnify the Court and to legalise its acts, as well as to procure the re-establishment of the Corporation under the name of a college. This Bill had passed through the House of Commons and had been twice read in the House of Lords before the members of the Corporation were aware of its purport. A petition in opposition to the Bill was at once prepared and presented to the House of Lords. This petition set forth that the Bill had been drawn up without the knowledge or sanction of the members of the late Company, who had not been convened to consider it. It further declared that the master, wardens, and assistants, without the knowledge or consent of the Company, had alienated the property of the Company, made purchases greatly beyond the extent allowed by law, and had been guilty of gross maladministration; that they had not taken one material step for the public good or the advancement of the science of surgery; that a certain number of the Court of Assistants had, as examiners, received for their private use a large share of the revenue of the Company; that if the Bill were to become law those persons who had been guilty of this maladministration would acquire absolute supervisal and control over the members and their affairs; that the ancient privileges of members would be annihilated, and their right of meeting in a General Court would be taken away; and that the Court of Assistants would be able to oblige members to swear to the observance of such laws as the Court might make, although the members themselves would have no voice in the making of these laws, and no choice in the appointment of those who should make them. Lord Thurlow, who took up the cause of those members who petitioned against the Bill, argued that the petitioners against the Bill had great reason to complain. Their privileges had been violated, and even their property invaded. He considered that however grating it might be to the ears of some people, meaning the Court of Assistants, they had the strongest title in the world to have their complaints heard with patience and attention. The result of Lord Thurlow's powerful intervention was that the Bill was thrown out in the last stage. But, in spite of the rejection of the Bill by the House of Lords, the discredited Court of Assistants of the defunct and dissolved Corporation did not despair; they continued to admit persons under letters testimonial, and though low in reputation and in funds, agreed on Dec. 13th, 1799, by a unanimous vote, to accept the charge of Hunter's Museum, for which Parliament had six months before voted a sum of £15,000. The next step followed as a matter of course: the Court of Assistants had now no difficulty, by the aid of courtly intrigue, in satisfying George III. that it was impossible to discharge its trust without some method of replenishing its finances. What Parliament had refused the King was easily prevailed upon to grant, and thus in the month of March, 1800, the College of Surgeons was established by a Royal Charter, which sanctioned most of the obnoxious provisions contained in the Bill rejected by the House of Lords.[3] The fact therefore stood out conspicuously in the negotiations which preceded and led up to the establishment of the College, that Parliament refused to pass a Bill which excluded Members of the College from a share in its government. Consequently, though it was and is true that Members have no legal right to the franchise by the Charter of 1800, they had and have at least a moral claim.

Such was the constitutional history of the Royal College of Surgeons of England, and it must be remembered that when THE LANCET was founded it was comparatively modern history, and the abuses had not had time to lose their distinctness of outline under any decent veil of antiquity, They were new and not hallowed by custom and years of acquiescence.

Wakley first fell foul of the Royal College of Surgeons of England because of a by-law which was passed in March, 1824, to make it compulsory for medical students to attend the lectures of certain hospital officials. The innovation appealed to him in two ways. Personally he was concerned because he was publishing these lectures in THE LANCET, and the contemporary medical press was, as narrated in the previous chapter, excessively disturbed in its sense of what was right thereby, and freely called him a robber. But if the lectures were compulsory for the students before they could take their diplomas the private character claimed for them by Abernethy and others was destroyed. A newspaper would have an undoubted right to report them, because it was to the public benefit to know whether instruction which the London medical man must willy-nilly receive was worth receiving. Lecturers chosen in this manner by the Council of the College were constituted public officials in their capacity as lecturers, and in addition to the importance and substantial fees thus ensured to them, could not claim all the privileges enjoyed by private individuals. In a second less direct way he was concerned in the working of this by-law. Some of the hospital surgeons appointed by the Royal College of Surgeons of England as the only persons whose lectures would be recognised as official charged their classes very large fees for attendance. Wakley had not been an affluent student, and had known many men much poorer than himself. He was always jealous of the rights of the poor man, and he inveighed against the extraction from the pockets of students of large fees for attendance upon the classes of certain men—not, as he asserted, the best men.

When he had got as far as this—as far, that is, as the statement that the best men were not selected to deliver these compulsory lectures—all the arguments which he had used against nepotism when attacking the domestic management of the large metropolitan hospitals came into service. He declared that the authorities of the College, by playing into the hands of the hospital surgeons, made of themselves a ring, so that the corporation, which ought to have existed for the good of its members at large, really only existed for its small class of governors and the officials appointed by them.

The official ring was thus arranged. The hospital surgeons

[2] See also a lucid and forcible little article by Mr. Tweedy, THE LANCET, March 23rd, 1889.

[3] THE LANCET, Oct. 30th and Dec. 11th, 1886.

appointed the lecturers to the medical school—that is, they appointed themselves, their relations, and the gentlemen who had paid them large fees to become their apprentices. The hospital surgeons were also the authorities at the College of Surgeons, that is they were the men who decided that the lectures of certain gentlemen should be compulsory for all medical students in London. The compulsory lectures were delivered by themselves, their relatives, or their apprentices. It was this corrupt arrangement against which Wakley worked. It moved him, as the nepotism that was prevalent at the Borough Hospitals moved him, to wrath and scorn, and his first attacks on the College had no historical foundation at all. They were consecutive to his attacks on the hospital lecturers who, though paid as public officials, desired to exclude the medical public from any participation in the benefits to accrue from hearing their words; and they were a rider to his proposition that the hospital surgeons who did not desire to see hospital reports in print were unskilful and prudently aware of their own limitations. But when the attack had been inaugurated on these lines the constitution of the College was attended to, its anatomy laid bare, and, as will be seen, Wakley's disclosures to the members of the unfair manner in which they were being treated by their rulers led to some sensational developments. These will be narrated in the chapters which follow, but it will not be out of place here to quote an open letter which appeared in THE LANCET as early as 1826, purporting to be addressed to the Court of Examiners of the College, but really designed to catch the attention of the members. The letter, as will be seen, summarises the more obvious grievances of the members, and was written by one of the ablest members of Wakley's staff, Mr. James Wardrop.

An Open Letter addressed to the Court of Examiners of the Royal College of Surgeons.

SIRS,—"If the members of the Court of Examiners and assistants of the Royal College of Surgeons are not too much employed in collating the Hunterian MSS. or at home listening to the chirping of cock sparrows,[4] or writing an oration on the splendid anatomical discovery of ordinary putrefaction they may perhaps find time to read this letter. We know that old men can recollect remote events better than those of later date. They can tell you what was done in such and such a year and will amplify all the circumstances; but they forget what happened in the last year. In other words, they can tell you what took place in their age of pleasure or in that of their ambition; they forget what they do in their age of avarice. It shall be my business to be their historian. I will endeavour to save their public actions from oblivion to receive the contempt and detestation of men of science in future ages. The court will well remember the following facts:—

"In the year 1797 the master, wardens, and assistants of the Corporation of Surgeons, without the knowledge or consent of the commonalty, presented a Bill to Parliament to elect the said corporation into a College. It was, in fact, to obtain a Bill of indemnity for squandering the property of the commonalty and trampling on their rights and privileges. Lord Thurlow, who had risen by his merit to the highest rank of his profession, saw immediately through the paltry artifices of this petty corporation. His lordship described their Bill as 'a miserable and wretched performance, in which the arrogance of the provisions maintained an equal contest with their absurdity.' The whole number of the Members at that period, exclusive of the court, amounted only to 500. The Bill had passed the House of Commons and had been twice read in the House of Lords before it was known to the commonalty. A meeting was called by a few spirited individuals and the number soon increased to 127. They petitioned the house against the further monopoly of this avaricious corporation, and at the third reading the Bill was rejected. The commentaries upon it, with the speeches of counsel, may be found in Woodfall's Parliamentary debates.

"Some curious facts were at that time elicited. The corporation were compelled to produce their accounts, and although, as I have said before, the number of the commonalty did not exceed 500, it was stated that since the passing of the 18th of George II. in the year 1744, the corporation had received in fees and quarterages and by other means the sum of £80,000! and that during the said period they had put £16,000 into their own pockets!!! What they could not get by Act of Parliament they have since obtained by charters. They are become a College and style themselves President, Vice-president, and Council; but the commonalty, who of course were not consulted about the charters, are still called Members. For my own part I would as soon be called a Member as a Fellow of such a College. They take our money, give us *ex post facto* laws, lock up our property, insult us with mock orations, live at our expense, and refuse to call us by our proper names!

"For the information of my professional brethren and fellow-sufferers I communicate this piece of intelligence: 'Every member from the moment he is admitted and has paid the fee of £22 to the court and the 5*s.* demanded by the beadle is as unequivocally entitled to the museum and the property of the College as any member of the court.'

"I need hardly remind you, Sir, that the magnificent collection of John Hunter was purchased by Government and that a loan of a large sum of money was supplied from the same source to erect a suitable building for its reception. Do you think the motive for such liberality was that twenty-one persons should have power to lock up the museum for eight months in the year? When their Bill was before the House of Lords it was said that they had a theatre without lectures and a library without books. It is true we have now some lectures on comparative anatomy and surgery; but the man best qualified to give the lectures on the former subject is doomed to fill the servile officer of conservator of the museum. They have also books, and some years ago Sir William Blizard promised that the library should soon be opened. We are still outside the door, however, and a part of the bust of Sir William, like the molten calf of the Israelites, may go down our throats (by the adulteration of bread or in the drinking of soda-water) before we shall see a book, especially the Hunterian MSS.

"The Museum is opened twice a week during four months in the year. The hours of admittance are from twelve to four o'clock. This does not extend to the whole collection, for the gallery is only accessible from twelve to two o'clock. Should the extensive and varied information and indefatigable kindness of the conservator of the museum, Mr. Clift, tempt an unfortunate individual to remain a minute after the clock has struck the hour his crime is announced by the loud and angry sound of the beadle's bell. This noisy warning is very quickly repeated, and lest he should not understand it the beadle calls out in a most autocratic tone, 'This way, sir.' The College member descends the steps muttering perhaps, as I have done, 'Any way but this way, sir.'

"If a knowledge of these facts will not rouse in the profession that spirit of opposition to the arbitrary power of the College which it is the object of these letters to excite I shall have the satisfaction to reflect that I have done my duty in making the attempt. "BRUTUS.

"Aug. 27th, 1825."

(To be continued.)

[4] Mr. Earle was nick-named "The Cock Sparrow."

ANNUAL REPORT FOR 1894 OF THE MEDICAL OFFICER OF HEALTH OF THE ADMINISTRATIVE COUNTY OF LONDON.

I.

THE third annual report recently issued by Mr. Shirley Murphy is a publication which deserves to be attentively studied by those who are interested in the health and welfare of the vast population of the metropolis. The appearance of this report, which relates to the year 1894, may perhaps seem to have been unduly delayed; but it should be remembered that the report in question is not that of a vestry medical officer, who advises his own sanitary authority alone, it is the report of the central medical officer superintending the forty-three sanitary areas of London, and being based on the separate contributions of as many local officers its

preparation cannot even be begun until the whole of the forty-three reports have been received from the vestries. The report for 1894 is arranged on the same general lines as those of its predecessors, hardly differing therefrom save in the amount and necessary variations of the letterpress.

The statistical data which accompany the county medical officer's reports differ from those published for the metropolis by the Registrar-General, chiefly in the fact that the latter deal exclusively with mortality, whilst the former take account in addition of the sickness which leads thereto, so far as this is ascertainable under the London Notification Act. The areas dealt with by these two authorities are not exactly co-extensive, the administrative county being somewhat larger than registration London. But although the difference in the two areas is not sufficient to appreciably affect the rates of mortality, still the want of uniformity is unfortunate, and will, we trust, be rectified before long. The statistical portions of the report are, as before, very complete and instructive. Passing over preliminary details respecting population, marriages, births, &c., we find that a lower death-rate is announced for London in 1894 than that of any year since 1837, when civil registration was first instituted. Much care has been taken in the distribution of deaths registered in institutions to the places from which the patients originally came and in correcting the district mortalities for these deaths as well as for the age differences in their several populations. Mr. Shirley Murphy exhibits an excellent method of utilising the life-table, published in a former report, for the purpose of comparing the mean rate of London mortality in the four years 1891–94 with that in the ten previous years. The death-rates at twelve groups of ages in the two periods are placed in two parallel columns of a table, a third column of which shows the difference per cent. between the rates at the several ages. From this table it is seen that whereas the mortality at all ages has declined in the more recent period, that of males from thirty-five to eighty-five years of age and that of females from forty-five to eighty-five have actually increased, the decline in the death-rate at all ages being mainly due to a lessened mortality at the earlier ages. Statements of this kind, however, give only a vague idea of the gain or loss to the community resulting from an altered death-rate, and it is in the possibility of obtaining a more tangible result that one of the chief uses of a life-table is exemplified. Mr. Shirley Murphy puts a case by way of illustration somewhat as follows. Assume that in a certain community 800 deaths occur in a year, half of which are among persons under twenty-five years of age, whose mean future lifetime is, say, thirty years, and that the remaining half of the deaths occur among persons over twenty-five years old, whose mean future lifetime is, say, fifteen years, then these 800 deaths will represent a total of $(400 \times 30) + (400 \times 15) = 18{,}000$ years of "life capital" *lost to the community*. Now suppose that in the following year 700 deaths occur in the same community, and that 600 of these deaths occur among persons under twenty-five years and the remaining 100 among persons over twenty-five, then the loss of life capital to the community will be $(600 \times 30) + (100 \times 15) = 19{,}500$ years. Thus, while there is a *saving* of 100 *lives* in the second year compared with the first, there is an actual *loss* to the community of 1500 years of "life capital." It is, therefore, apparent that the actual number of lives saved in any period is at best but a rough measure of progress, and that the value of *each life* gained or lost must be considered in order to arrive at just conclusions. From the London life-table (1881–90) Mr. Shirley Murphy has calculated the mean future life time of males and females in groups of ages, and these have been printed in tabular form in the report.

The difference between the two sets of figures obtained by comparing the deaths occurring in 1891–4 with those that would have occurred at the same ages, if the death-rates of 1881–90 had still been maintained, will be the number of lives gained or lost at each age by differences of mortality. If, therefore, the mean future lifetime at the several ages be applied to these differences the actual gain or loss may be expressed in "life capital." Another table (II.) shows that during the period 1891–94, as compared with the period 1881–90, there has been a mean saving of 1042 lives annually in London, and that this represents 79,606 years of "life capital" annually saved to the community.

In view of the serious increase recently observed in the proportion of children in the London population who are returned as unvaccinated, we are pleased to find that Mr. Murphy has devoted considerable space to the discussion of the relations of vaccination to small-pox. During the five complete years in which the notification of infectious diseases in London has been compulsory the reported attacks by small-pox have increased from 60 in the year 1890 to 2815 in 1893; and although the number has again fallen in the year 1894 to 1193, still even this latter number, in the vast population of London, imperfectly protected as it now is by vaccination, must be looked upon as a source of imminent danger. The disease appears to have been widely disseminated over the entire county of London, the small district of St. Olave being the only one in the area which was free from invasion throughout the year. The attacks were distributed over the whole period, but as many as 143 cases were notified in the last week of July. This exceptional incidence was mainly due to a serious prevalence of the disease in the district of Marylebone. Some of the Eastern districts, notably Bethnal Green and Poplar, suffered heavily in May and June, and the invasion of West Ham was probably associated with this circumstance. In many instances mild or unrecognised cases of small-pox served as centres for the infection of numerous persons. Mr. Murphy gives an interesting table received from the Asylums Board, which shows the state as to vaccination of the small-pox patients admitted during the year 1894. In this period 797 vaccinated patients were admitted and 252 persons without cicatrices, whilst 68 were admitted bearing no evidence as to vaccination. The difference in regard to case fatality is very striking amongst these several classes of patients. Thus, the 797 vaccinated cases included 136 under fifteen years old, and of these not one died, whereas of the 252 unvaccinated cases 192 were under fifteen, and of these 39 or 20 per cent. died. At the later ages (over fifteen years) the mortality amongst vaccinated persons, although high, was scarcely more than one-fifth of that prevailing amongst unvaccinated persons of the same age. In his two previous reports Mr. Murphy had drawn special attention to the large increase which had taken place in recent years in the number of unvaccinated children in London. In the present report he returns to the subject and gives a table showing the proportion of children born in London since 1881 who were stated in the returns of the Local Government Board to have been "not finally accounted for" as regards vaccination. These returns are worthy of serious consideration; they show that whereas in the year 1881 the proportion of children not finally accounted for by the vaccination officers amounted to not more than 5·7 per cent. of the total births, the proportion of unprotected infants has steadily increased ever since that date, until in 1894 it reached the dangerous figure of 18·4 per cent.

THE ANGLO-EGYPTIAN EXPEDITION.

THERE is not much to chronicle with regard to this campaign. The relief of the pressure upon Kassala, which was one of the main objects of the expedition, seems to have been attained, the attention of the Dervishes having been directed from that position to the Nile and Suakin. But very little is really known of Osman Digna's whereabouts, his plans and intentions, or of the strength of his forces. The accounts given by tribes friendly to the British or by scouts and deserters are not, of course, reliable; but so far as there is information it would seem that the Dervish forces are animated by a very different and less unanimous spirit than that which obtained among them in the earlier campaigns on the Nile and in the Soudan. They appear to have been disheartened by recent reverses, and it is stated that they are in some straits as regards provisions for themselves and forage for their horses and camels. Nothing seems to be known at headquarters in India as to the dispatch of any native troops for Suakin, and it certainly does not yet seem to be settled that any portion of the Indian army will be sent to this station or Egypt. It is very gratifying to report that the men of the North Staffordshire Regiment are in good health and excellent spirits and that their discipline and behaviour have been exemplary. There were by the latest intelligence some fifty men of the regiment on the sick list. The heat is now great, reaching 114° F., but there is generally a slight breeze; still, the excessive heat is

much felt by the troops. We are very glad to learn that ice machines are being erected, for plentiful supplies of ice are a matter of necessity. A large amount of hospital accommodation has been provided at Wady Halfa and the other stations for the sick of the expedition, and it will very probably be needed, for the percentage of sick may be fairly expected to be high during the hot months. Sharp attacks of heat fever and heat stroke will be common, and for these supplies of ice must be forthcoming. No mention is made of the occurrence of enteric fever among the force. We are not told what is the exact nature of the accommodation provided for the troops, but thick or heavily thatched roofs will be required as a protection against the sun. The mud huts that have been used on previous occasions in Egypt proved very good. The telegraph has now been completed to Akasheh and the laying of the railway line is actively proceeding. It is generally assumed that Sir Redvers Buller will be in supreme command of the Anglo-Egyptian force when the advance on Dongola takes place. According to an article in the *Fortnightly Review* it is stated on unimpeachable authority that Lord Cromer has been, and is, in favour of the advance, which will no doubt take place as soon as the season is considered favourable. When the work of the expedition is accomplished it will be found that from first to last the labour entailed will have been very considerable and the undertaking an arduous one.

THE LONDON AND COUNTIES MEDICAL PROTECTION SOCIETY, LIMITED.

THE annual report of the council, which will be presented to the members at the general meeting to be held at the Frascati Restaurant, 26, Oxford-street, W., to-day (Friday), at 5 o'clock P.M., states that although the society has had the good fortune to avoid any very expensive lawsuits in the past twelve months, there has nevertheless been a large amount of work done on behalf of its members, and very many cases have been dealt with and brought to a satisfactory issue. Several members have been assisted in putting a stop to slanders which were being circulated to their detriment, ample apologies being given by those responsible for the slanders. The society intervened in a dispute between the staff and managing committee of a hospital, the outcome being in the main satisfactory. In addition to other matters dealt with by the society, advice has been given to many members in a great variety of difficulties such as so frequently befall medical men. Several cases of "covering" have again this year been reported to the General Medical Council. The society has been the means of exacting penalties from several unqualified practitioners, and has done much in the direction of suppressing quackery.

The council are pleased to be able once again to call attention to the satisfactory financial position of the society. The annual balance sheet shows that on Dec. 31st, 1895, the total outstanding liabilities of the society amounted to the sum of £25 11*s.* 3*d.*, whilst the amount of cash in hand and with the society's bankers amounted to £151 9*s.* The fact that the third annual balance sheet of a society such as this should show a clear cash surplus of £125 17*s.* 9*d.* is one which will speak for itself.

THE ROYAL ACADEMY.

THE 128th exhibition of the Royal Academy of Arts will strike the visitor as a more level display of talent than usual. If there are no startling successes, if there is no picture whose theme or treatment, or happy combination of both, marks it out at once as a "picture of the year," there are certainly fewer hot, crude, thoughtless works than might be expected, taking into consideration the large number hung and the curious conditions of their hanging.

The popular Academicians and prominent painters are represented by typical pictures. No one could mistake Lord Leighton's "Clytie" for the work of any other brush, and its appearance on the walls of Burlington House is a pathetic reminder of the loss recently sustained by English art. The new President has a curious, weird, and striking work, "A Fore-runner," in the first gallery; it is a reversion to his early style. Mr. Sidney Cooper paints cattle as deftly as ever—see "Mist Clearing Off" in the second gallery. Mr. W. P. Frith's little highly-finished picture, "Juliet and the Nurse," belongs to a class of work now looked upon as old-fashioned, but certain to survive much of the more suggestive splutterings of his extreme juniors. Mr. Swan sends some admirable leopards, and Mr. Stanhope Forbes in "The New Calf" reminds the casual eye strongly of the picture which not so long ago won him immediate fame and an Associate's honours. Mr. Sargent sends the portrait of the year and it depicts the man of the year. His "Joseph Chamberlain" is certain to attract immense and well-deserved attention.

There are several portraits on the walls of men well known in the medical world; in fact, there are more portraits of members of our profession than of any other class. The best of these is Sir John Millais's "Sir Richard Quain." It is a quiet, distinguished, and lifelike little work, unconventional but natural. The President of the General Medical Council is shown in profile, and the expression of the face is reflective, even to seriousness. The presentation portrait of Sir Joseph Lister by Mr. J. H. Lorimer hangs on the line in Gallery X. and has one unmistakable merit, it is a remarkably good portrait; but there is nothing distinguished about the treatment, and to our mind the artist has not quite risen to his subject. If this is the case with the picture of Sir Joseph Lister it is emphatically so with Mr. Ouless's portrait of Sir Henry Acland. Sir Henry Acland's friends will forgive us if we say that his arduous busy practical career has never been able to detract from an exceedingly striking and picturesque exterior. Mr. Ouless's representation is the portrait of an able man, but would not allow those who do not know to guess that it was also the representation of a very distinguished-looking man. One of the best portraits in the gallery is by Mr. Herkomer, the subject being Dr. J. Leon Williams, whose learned paper on the minute structure of dental enamel recently communicated to the Royal Society we publish in our columns this week. The portrait is hung in a fine position and is a good likeness and a truly artistic picture. There are one or two portraits of medical men which are very distinctly of the presentation stamp. Mr. Ouless's "Dr. W. M. Dobie" and Mr. Luke Fildes's "Mr. Frederick Treves" are cases in point. Both are faithful representations of their subjects, but neither can be said to have much claim to be considered great pictures. Mr. Stanhope Forbes's "Sir Peter Eade" in Gallery VIII. is a much more inspiriting piece of painting. There is an excellent portrait of Dr. Edward Liveing, the Registrar of the Royal College of Physicians, by Miss S. E. Rands, which hangs in a good place in the First Gallery; while Mr. Fildes's "Dr. Thomas Buzzard" is also a careful and scholarly piece of work, giving, however, a good deal of austerity to its subject.

Things medical, we are glad to say, have not recommended themselves much to the exhibitors in this year's Academy, for the pathos to be got from the representation of the sick bed is generally rather cheap. Mr. Herkomer portrays a district nurse taking out a child for her first walk after a long illness, and it must be admitted that the child looks uncomfortable, but the nurse does not seem to us to be supporting her patient in a particularly effective manner.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN thirty-three of the largest English towns 6783 births and 4062 deaths were registered during the week ending April 25th. The annual rate of mortality in these towns, which had been 20·0 and 19·0 per 1000 in the two preceding weeks, rose again last week to 19·5. In London the rate was 19·3 per 1000, while it averaged 19·7 in the thirty-two provincial towns. The lowest rates in these towns were 11·6 in Swansea, 13·5 in Cardiff and in Huddersfield, 13·6 in Leicester, and 13·8 in Brighton; the highest rates were 23·3 in Liverpool, 24·7 in Oldham, 25·6 in Preston, 26·2 in Salford, and 27·8 in Manchester. The 4062 deaths included 699 which were referred to the principal zymotic diseases, against 666 and 635 in the two preceding

weeks; of these, 297 resulted from measles, 231 from whooping-cough, 64 from diphtheria, 40 from scarlet fever, 33 from diarrhœa, 33 from "fever" (principally enteric), and 1 from small-pox. The lowest death-rates from these diseases were recorded in Preston, Halifax, Brighton, and Bradford; and the highest rates in London, Oldham, Birkenhead, Manchester, and Sunderland. The greatest mortality from measles occurred in London, Birkenhead, Manchester, Oldham, and Sunderland; from whooping-cough in London, Croydon, Liverpool, Bolton, and Manchester; and from "fever" in Swansea. The mortality from scarlet fever showed no marked excess in any of the large towns. The 64 deaths from diphtheria included 41 in London, 5 in Birmingham, 3 in Liverpool, 3 in Manchester, and 3 in Leeds. One fatal case of small-pox was registered in Bristol, but not one in any other of the thirty-three large towns. There were 16 cases of small-pox under treatment in the Metropolitan Asylum Hospitals and in the Highgate Small-pox Hospital on Saturday last, the 20th inst., against 23, 21, and 16 at the end of the three preceding weeks; 8 new cases were admitted during the week, against 2, 5, and 4 in the three preceding weeks. The number of scarlet fever patients in the Metropolitan Asylum Hospitals and in the London Fever Hospital at the end of the week was 2534, against 2676, 2587, and 2527 on the three preceding Saturdays; 236 new cases were admitted during the week, against 186, 226, and 201 in the three preceding weeks. The deaths referred to diseases of the respiratory organs in London, which had risen in the three preceding weeks from 270 to 328, declined again last week to 287, and were 79 below the corrected average. The causes of 50, or 1·2 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Leicester, Nottingham, Salford, Leeds, and in twelve other smaller towns; the largest proportions of uncertified deaths were registered in Birmingham, Liverpool, Sheffield and Hull.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 19·7 and 19·0 per 1000 in the two preceding weeks, rose again to 19·9 during the week ending April 25th, and slightly exceeded the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 16·1 in Aberdeen and 17·1 in Dundee to 21·0 in Greenock and 22·5 in Leith. The 580 deaths in these towns included 30 which were referred to whooping-cough, 12 to diarrhœa, 10 to scarlet fever, 9 to measles, 4 to "fever," 2 to diphtheria, and not one to small-pox. In all, 67 deaths resulted from these principal zymotic diseases, against 91 and 56 in the two preceding weeks. These 67 deaths were equal to an annual rate of 2·3 per 1000, which was 1·1 below the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of whooping-cough, which had been 29 and 21 in the two preceding weeks, rose again to 30 last week, of which 21 occurred in Glasgow and 4 in Aberdeen. The deaths referred to scarlet fever, which had increased from 5 to 7 in the three preceding weeks, further rose to 10 last week, and included 4 in Glasgow, 2 in Edinburgh, and 2 in Dundee. The 9 fatal cases of measles corresponded with the number in the preceding week, and included 5 in Glasgow and 3 in Dundee. The deaths referred to different forms of "fever," which had been 12 and 7 in the two preceding weeks, further declined to 4 last week, of which 2 occurred in Glasgow. Of the 2 fatal cases of diphtheria 1 was recorded in Dundee and 1 in Leith. The deaths from diseases of the respiratory organs in these towns, which had been 110 and 109 in the two preceding weeks, rose again to 120 last week, but were 25 below the number in the corresponding period of last year. The causes of 36, or more than 6 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had declined in the three preceding weeks from 25·5 to 20·6 per 1000, rose again to 23·3 during the week ending April 25th. During the past four weeks of the current quarter the death-rate in the city has averaged 23·7 per 1000, the rate during the same period being 19·2 in London and 17·6 in Edinburgh. The 156 deaths registered in Dublin during the week under notice showed an increase of 18 upon the number in the preceding week, and included 4 which were referred to the principal zymotic diseases, against 10 and 6 in the two preceding weeks; of these, 3 resulted from whooping-cough and 1 from scarlet fever, but not one either from small-pox, measles, diphtheria, "fever," or diarrhœa. These 4 deaths were equal to an annual rate of 0·6 per 1000, the zymotic death-rate during the same period being 4·3 in London and 1·3 in Edinburgh. The 3 fatal cases of whooping-cough exceeded the number in any of the six preceding weeks, while the mortality from scarlet fever was below that recorded in any recent week. The 156 deaths in Dublin last week included 30 of infants under one year of age, and 45 of persons aged upwards of sixty years; the deaths both of infants and of elderly persons showed an increase upon the numbers recorded in recent weeks. Five inquest cases and 6 deaths from violence were registered; and 63, or more than a third, of the deaths occurred in public institutions. The causes of 14, or nearly 9 per cent., of the deaths in the city last week were not certified.

THE SERVICES.

MOVEMENTS OF THE MEDICAL STAFF.

SURGEON-CAPTAINS SKERRETT and Kearney have embarked with the reinforcements for the Cape. Surgeon-Colonel Preston has arrived from Hong-Kong and proceeded to Dublin as Principal Medical Officer in Ireland. Surgeon-Lieutenant-Colonel Wolseley has resumed his duties at Wadley on return from Ashanti.

ARMY MEDICAL STAFF.

Brigade-Surgeon-Lieutenant-Colonel John Peter Hamilton Boileau, M.D., F.R.C.S.I., is placed on retired pay. Surgeon-Major Arthur M. Kavanagh, from half-pay, to be Surgeon-Major, vice A. H. Morgan, D.S.O., retired, with precedence next below Surgeon-Major J. D. Day, M.B.

INDIA AND THE INDIAN MEDICAL SERVICES.

The Queen has approved of the following promotions among the officers of the Indian Medical Service:—To be Surgeon-Colonel: Brigade-Surgeon-Lieutenant-Colonel Terence Joseph McGann, Madras Establishment. Surgeon-Lieutenants to be Surgeon-Captains: *Bengal Establishment:* Charles Milne, Vivian Godfrey Drake-Brockman, William Young, John Joseph Bourke, George Yeates Cobb Hunter, Bernard Robert Chatterton, Cedric Barkley Prall, Charles Edward Williams, John Norman MacLeod, Walter Holland Ogilvie, Thomas Alfred Ollivant Langston, Richard Heard, Edgar Rowe Parry, Walter Hood Orr, and Paxton St. Clair More. *Madras Establishment:* George Bidie and John Plowden Morton. Her Majesty has also approved of the retirement from the Service of the undermentioned officers:—Surgeon-Major-General Peter Stephenson Turnbull, Bombay Establishment; Brigade-Surgeon-Lieutenant-Colonel Colin William MacRury, Bombay Establishment; Surgeon-Lieutenant-Colonel Benjamin Evers, Bengal Establishment; and Surgeon-Lieutenant-Colonel John O'Neill, Bengal Establishment.—*London Gazette.*

The following promotions are made, subject to Her Majesty's approval:—*Bengal Medical Establishment:* Surgeon-Majors to be Surgeon-Lieutenant-Colonels: Arthur Tomes, M.D., William Arthur Mawson, Sorabshaw Hormasji Dantra, Henry Hamilton, Bernard Doyle, Robert Cobb, Augustus Edward Stephens, and William Hotson Cadge. Surgeon-Captains to be Surgeon-Majors: John Henry Tull Walsh, Harold Hendley, Hormasjee Edaljee Banatvala, George Herbert Fink, and William George Patrick Alpin. *Madras Medical Establishment:* Surgeon-Majors to be Surgeon-Lieutenant-Colonels: John Maitland, George Lemon Walker, Charles Lethbridge Swaine, and Maurice Henry Smith. *Bombay Medical Establishment:* Surgeon-Majors to be Surgeon-Lieutenant-Colonels: John Macgegor, Alexander Kenneth Stewart, William George Hume Henderson, Kharshedji Ardeshir Dalal, and Henry Walker Butler Boyd.

NAVAL MEDICAL SERVICE.

The following appointments are announced:—Surgeons:

H. Elliot to the *Marathon:* J. A. Keogh to the *Australia.* Surgeons and Agents: J. H. Spreate at Llanwit; C. M. Kemp at Shoreham and Southwick; M. A. Lyden at Costello Bay and Spiddal; S. Killen at Carrickfergus; J. H. McAuley at Ringsend.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain Frederick H. Appleby to be Surgeon-Major.

YEOMANRY CAVALRY.

Nottinghamshire (Southern Nottinghamshire): Surgeon-Captain J. F. D. Willoughby resigns his commission.

VOLUNTEER CORPS.

Artillery: 1st Ayrshire and Galloway: Alexander John Mackintosh, M.B., to be Surgeon-Lieutenant. *Rifle:* 5th (Isle of Wight, Princess Beatrice's) Volunteer Battalion the Hampshire Regiment: Surgeon-Lieutenant K. W. I. Mackenzie to be Surgeon-Captain.

THE HEALTH OF THE DUTCH INDIAN ARMY.

In the April number of the *Archives de Médecine Navale et Coloniale* Dr. H. Gros supplies an interesting *résumé* of the medico-statistical report[1] compiled for the year 1894 by the medical department of the Dutch army stationed in the East India islands, otherwise known as Insulinde and Malaysia. In his paper Dr. Gros enters considerably into detail, but with a view to exhibit at a glance the principal facts and contrasts adduced we have constructed the subjoined tables:—

Vital Statistics of the Dutch Troops serving in Insulinde.

1894.	Strength.	Morbidity.		Mortality.		Loss by invaliding, &c., per 1000 of strength.			
		Cases.	Per 1000 of strength.	Deaths.	Per 1000 of strength.	Discharged on medical grounds.	Relegated to light duty.	Sent to Europe for change.	Sent to local sanatoria.
Europeans	16,631	29,493	1755	272	16·35	14·66	14·66	25·44	19·21
Asiatics ...	20,832	29,013	1392	478	22·94	73·06	8·73	*Nil.*	9·74
Africans ...	68	130	1917	?	?	—	—	—	—

Total loss from all causes—

Europeans	93·32
Asiatics	114·47
Africans	—

Chief Causes of Mortality.

—	Percentage of total deaths.	
	Europeans.	Asiatics.
Killed in action or died from wounds	29·41	9·22
Paludal affections	19·89	11·92
Intestinal diseases	17·23	5·02
Suicide	5·14	0·41
Beri-beri	4·41	46·86
Respiratory affections	2·94	3·13
Enteric fever	1·10	?

No deaths from tetanus, hydrophobia, or diphtheria occurred during the year; and, unlike our experience in India, the ravages of typhoid fever were comparatively slight. Under diseases of the nervous system are included five cases of sunstroke in Europeans. Two Asiatics suffered from leprosy and two more from cholera, the latter cases proving fatal. Dr. Gros concludes his article with graphic charts representing the march of the chief causes of disability during the past five years—namely, malaria, beri-beri, and venereal affections. That referring to the beri-beri shows a lamentable state of affairs.

TORTOISE TENTS FOR THE ARGENTINE GOVERNMENT.

A number of interested persons, including Surgeon-General Sir Guyer Hunter, Surgeon-Major-General Jameson, Surgeon-Major-General Taylor, and Surgeon-Colonel Gubbins, assembled at the works of the Military Equipment Stores and Tortoise Tents Company at Battersea on April 23rd to inspect a collection of tortoise army hospital wagons and tents which the company has just completed for the Argentine Government. The South American Republic Medical Inspector, Dr. Albert Costa, was also present. On one side of the grass plot adjoining the firm's manufactory thirty of these tortoise army hospital wagons were drawn up in line, and on the other eighteen of their tents were pitched, while the centre of the ground was occupied by the "Congo" and military stoves, their utility, weight, and component parts being severally described by the officials present. The hospital wagons appeared good, serviceable vehicles, differing but little from the pattern in use in our own service. Their covering, however, instead of being a fixture from the sides of the wagon, consisted of a loose tortoise-shaped tent, the sides being folded in and strapped to the top rail of the vehicle. When required, by just disengaging the straps the folds can be carried outward, and by means of half-inch ropes and pegs form a serviceable and water-proof tent. There were in addition two elongated cylindrical metal water receptacles to every wagon, one of which was carried beneath and just behind the shaft of the cart. Each of these water barrels contained sixty pints of fluid. On removing the lid of one of them a partition was noticed about three or four inches from the rim, in the centre of which was a hole for the filling and emptying of the barrel, and into the aperture was screwed a metal cup for use when required. There was also a metal lip soldered on to the side of the cylinder to prevent waste of water when pouring it out. Two sizes of camp ovens were shown, the larger pair weighing some 500 lb., and they could only be carried in a wagon or on a camel's back. The smaller size, two in number, weighed when complete some 85 lb., and these appeared by far the most useful, as they could be borne on the heads of men and were capable of being put together in some two and a half minutes and of cooking food for fifty men. As regards the tortoise tents, with their sombre green-coloured water-proof texture, they are no doubt handy and very serviceable erections, but they are to a certain extent dark and gloomy within, and their poles, though admirably finished as far as workmanship is concerned, appear too fragile for the rough work incidental to campaigning; it may perhaps be doubted whether these tortoise tents are in any way superior to our own well-ventilated, square, roomy tents made on the old Indian principle.

MEDICAL AFFAIRS IN INDIA.

The Indian papers received by the last mail are pretty full of matters medical, including Surgeon-Lieutenant-Colonel Lawrie's address on the Malarial Parasite at the Grant Medical College, Bombay, and the discussion that followed its reading, references to subjects embodied in the late report of the Sanitary Commissioner with the Government of India, correspondence regarding M. Haffkine's methods of vaccination against cholera, and articles on the state of the medical services.

Adverting to one of these subjects we may say that Surgeon-Lieutenant-Colonel Lawrie is endowed with great energy and powers of work as well as the courage of his opinions. If he is able to establish his view as to the alleged mistaken notions entertained by European observers in regard to Laveran's parasite he will assuredly obtain all the credit he deserves. Shortly put, he contends that the microscopic appearances discoverable in the blood are not really due to the presence and metamorphoses of a parasitic element, but to changes brought about in the normal ingredients of the blood through the perverted function of a diseased spleen. His address consists of two parts: one of destructive criticism, in which he alleges that the observations of histologists in respect of the Laveran bodies are founded in error and are susceptible of a different explanation to that given by them, and the other constructive, in which he sets forth his views as to the part played by the spleen in malarious subjects, in the production and development of blood cells which in their career and appearances deviate from the normal and healthy standard and give rise, he alleges, to those appearances which microscopists have mistaken for those caused by a parasite—the plasmodium malariæ. We have just received the address and hope to publish it in an early issue of THE LANCET.

ROYAL UNITED SERVICE INSTITUTION.

Lord Knutsford presided at a meeting held in the Royal

[1] Geneeskundig Tijdschrift voor Nederlandsch Indie.

United Service Institution on April 24th to hear an address from Mr. J. Furley on the Convention of Geneva and the Care of Sick and Wounded in War. In the course of his lecture Mr. Furley said that the badge was undoubtedly abused, but this only proved the necessity of making the powers conferred by the Convention of Geneva universally known, and also placing some restriction on the assumed rights of benevolent neutrals. It was essential that the Red Cross should be equally respected by soldiers as well as civilians. He considered that we possessed in England the means, *personnel* and *matériel*, out of which an effective supplement to the Army Hospital Corps could be formed to a degree that had never been attained in any other country, much as we could learn from other countries in regard to its organisation and extension to the requirements of war.

THE SPREAD OF SMALL-POX.

We commend the following letter to the consideration of the authorities. Gloucester has suffered severely, and if its sins are not to be visited on other towns the danger which our correspondent refers to must be dealt with immediately.

To the Editors of THE LANCET.

SIRS,—The dates fixed for assembling of "old hands" for Militia trainings being now at hand, is it too much to ask what precautions, if any, have been taken to prevent the importation of small-pox into hitherto healthy districts by men coming from Gloucester or the neighbourhood? Might I suggest that where any man's last-known address was in or near Gloucester he should be given leave off this training unless he can produce a certificate of recent vaccination. The assembling of the county Militia has been abandoned, but there may well be men in other regiments who reside in the infected district and whose coming thence into a fresh place might be a source of danger, not only to their comrades, but to the population of the place where the training is held.

I am, Sirs, yours faithfully,

SANITAS.

PORTRAIT OF SURGEON-GENERAL SIR JOSEPH FAYRER, BART., K.C.S.I.

The subscribers to the portrait fund will be pleased to hear that the committee have invited Sir Joseph Fayrer to sit for his portrait to Mr. Sydney Hall. It is expected that the picture will be finished early in July, when it will be placed in the officers' mess at Netley. This portrait is a testimonial presented to Sir Joseph Fayrer by his brother officers of the army medical services and other friends and admirers as some recognition of the great services he has rendered by his writings and official life to the army and to the Army Medical School, of the Senate of which he was an active member for many years.

DEATH IN THE SERVICES.

Inspector-General Arthur Anderson, C.B., M.D., on the 26th ult. He entered the Army in October, 1835, as Assistant Surgeon, and was appointed Surgeon in December, 1845. He attained the rank of Surgeon-Major in 1854, of Deputy Inspector-General in 1858. Inspector-General in 1862, and retired on half-pay in 1867. He served in the Eastern campaign of 1854, and was present at the battles of Alma, Balaclava, and Inkerman, and at the siege of Sebastopol. He was Principal Medical Officer, 4th Division of Balaclava and Inkerman (medal with four clasps, Turkish medal). He was also created a Knight of the Legion of Honour. He was present at the capture of Canton in 1857 (medal with clasp).

THE MATABELE RISING.

Public attention has been absorbed by the state of affairs in South Africa and the exciting news about the results of the Pretoria trial and the sharp fighting in the vicinity of Bulawayo. The garrison of that place was not only holding its own, but had made some very successful sorties. The number of killed and wounded on the part of those defending Bulawayo is, compared with the losses inflicted on the Matabeles, small; but we know relatively nothing about the hospital arrangements in Bulawayo itself. It is believed that the place can be successfully held until relieved.

HONG-KONG.

According to telegraphic intelligence received at the Colonial Office the Governor of Hong-Kong reports seventy-five fresh cases of bubonic plague in the colony during the week ending the 28th ult., and the number of deaths during the same period as also seventy-five.

The Queen has granted to Mr. Sidney Langford Hinde, L.S.A. Lond., Médecin, Service d'Etat du Congo, Boma, Her Royal licence and authority to accept and wear the Medal for the Campagne Arabe, 1892-94, L'Etoile du Service, and the Cross of the Royal Order of the Lion, conferred upon him by His Majesty King Leopold II., King of the Belgians, in recognition of his services while actually and entirely employed beyond Her Majesty's dominions in the service of the Congo Free State.

The National Society for Aid to Sick and Wounded in War has, as mentioned in another column, sent two surgeons to South Africa for service in connexion with the troubles in Matabeleland.

Surgeon-Major-General James Jameson will take up the appointment of Director-General of the Army Medical Department on May 7th.

Correspondence.

"Audi alteram partem."

THE MIDWIVES REGISTRATION BILL.

To the Editors of THE LANCET.

SIRS,—We would not trouble you did it not appear that those who are supporting this registration of midwives fail to grasp the seriousness of its meaning. Moreover, the second reading of the Bill is fixed for an early day in May. The actual aim of the registration of midwives is to establish a semi-educated class of midwifery practitioners to attend women in their confinements, on their sole responsibility and without the direct supervision of a medical practitioner. If this proposal were enacted it would repeal the Medical Act, 1886, which enacts that if any person wish to lawfully practise any branch of medicine—say, midwifery, or even affections of the eye or skin—such person must study for at least five years the three subjects of medicine, surgery, and midwifery, pass stringent examinations in them, and be registered.

This education is the minimum requirement. Section 2 (2) of the Medical Act, 1886, enacts: "The standard of proficiency required from candidates at the said qualifying examinations shall be such as sufficiently to guarantee the possession of the knowledge and skill requisite for the efficient practice of medicine, surgery, and midwifery, and it shall be the duty of the Medical Council to secure the maintenance of such standard of proficiency as aforesaid." This period of study being necessary in the public interest, the action of those who propose to establish an inferior order of midwife practitioners threatens to repeal the Medical Act and to revert to the death-dealing system associated with early midwifery practice. This Act is a life- and health-saving Act. To practise midwifery with efficiency and with the least possible danger to the public the practitioner must possess a full and perfect training in medicine and surgery as well as in midwifery. A large proportion of women about to be confined and many newly-born infants suffer from complaints which require medical and surgical skill. This inseparable unity of the three branches of medicine is one of national import and was recognised as such by the Royal Commission (1882) on the Medical Acts, among whom were the late Bishop of Peterborough, Earl Camperdown, Sir G. Jessel, Sir W. Jenner, Sir J. Simon, Mr. Huxley, Sir W. Turner, and others. This Commission reported as follows: "Another grave defect of the licensing system lies in the fact that nearly all the medical corporations grant diplomas in medicine alone or in surgery alone. There is no point of medical reform on which there is so general an agreement as that the holding of a licence ought to imply the possession of a complete qualification for practice; that is to say, the attainment of a sufficient standard of proficiency in all the three essential branches of medical practice—medicine, surgery, and midwifery. It is our opinion that the holding of a licence ought to be conclusive evidence of sufficient proficiency in medicine, surgery, and midwifery."

To understand the meaning of this life-saving recommendation we would state that previously to the above date the Medical Act (1858) recognised three classes of practitioners—viz., those educated in and who practised medicine only, or surgery only, or midwifery only. As practitioners who were educated and licensed to practise only one of these three branches were called upon to treat patients suffering from complaints which they had neither been educated nor licensed to treat, this condition of affairs constituted a grave danger to the public health. Hence the final abolition of what was

known as the partially-educated practitioner—a class of practitioner whom Continental Governments are suppressing—but one whom those in favour of the registration of midwives now ask Parliament to resuscitate and so to bring back those horrors associated with childbirth when midwifery was divorced from medicine, when the lying-in chamber was often the first stage to the chamber of death, and when the Fellows of the Royal College of Physicians of London—to their everlasting disgrace be it told—reported to the Home Secretary in 1827 that the practising of midwifery was "an art foreign to the habits of gentlemen of enlarged academic education." This evil of partially-trained practitioners caused grave discontent among medical educational bodies. In 1877 the Royal College of Surgeons of England reported to the General Medical Council as follows: "As regards any revival of the old system, whether for male or for female candidates, the President would report to the Council that in their opinion the objections to such a course are insuperable. The President would remind the Council that the registrability of midwifery licences, independently of qualifications to practise medicine and surgery, has been brought under the notice of Her Majesty's Government by the General Medical Council as "a serious error in the Medical Act . . calculated to be injurious to the public interest and an error which should be corrected by legislation."

These historical facts show the dangers of the proposal. The supplying of the highest medical skill to all—especially to the poorer and working classes when "in the great pain and peril of childbirth"—is of great national importance if we would maintain the physical health of our population. When it is remembered that every day in England at least thirteen women lose their lives in childbirth, that one woman in every fifteen confined in the first labour dies, that one death in every ninety-five of the total deaths from all causes is due to childbirth, that from 1871 to 1894 at the very minimum at least 50,542 women died from childbed fever and at least 52,819 from the so-termed accidents of childbirth,—when the Registrar-General states that these figures "are in all probability very much understated," when we refuse to shock the public by giving facts showing the terrible sick-rate and chronic ill-health rates which follow what some are pleased to call "natural" labour, surely such undisputed realities are sufficient to give us pause. The present provisions are amply sufficient. Articles 182 and 183 of the Poor-law Commissioners of 1847 empower Guardians of the Poor to grant an order to any poor woman in her confinement so that the district medical officer may attend to her; while Article 1 of the general order of the Local Government Board, January, 1892, gives guardians power to appoint district nurses to nurse such women. The skilful nursing of these and their newly-born infants is of urgent necessity, and if those anxious to supply the poor with semi-educated midwife practitioners would use their efforts to put the above orders into operation the best results would follow. Also, if other voluntary lying-in medical charities followed the example set by the committees of the lying-in hospitals at Newcastle and Oxford—where medical practitioners and nurses are appointed in each district to treat and nurse those women who are not eligible for Poor-law medical relief and who are unable to pay the usual medical fees—great benefits would accrue. We are anxious to improve the training of all midwifery nurses and if need be to support a practical scheme for their local registration, and we do not take any objection to the registration of midwives provided they act as midwifery nurses only and under the immediate supervision of medical practitioners. We earnestly protest against the proposition—one so antagonistic to the interests of the public and the best traditions of the medical profession—that a semi-educated class of midwifery practitioners is quite good enough for the poor women and the wives of the working classes, while well-to-do women have the highest professional skill available for their confinements.

We are, Sirs, yours truly,

L. ATTHILL,
Late President of the Royal College of Physicians in Ireland; late Master of the Rotunda Hospital; Member of the General Medical Council.

G. W. BALFOUR,
Consulting Physician to the Royal Infirmary, Edinburgh; Consulting Physician to the Royal Hospital for Children.

R. BARNES,
Consulting Physician to St. George's Hospital, London; late President of the Obstetrical Society.

J. BARR,
Physician to the Northern Hospital, Liverpool.

D. C. BLACK,
Physician to the Public Dispensary; Professor of Physiology in Anderson's College, Glasgow.

C. CAMPBELL,
Surgeon to the Poor-law Infirmary; Public Vaccinator, Saddleworth.

T. CLARKE, C.C.,
Physician to the Consumption Hospital, Liverpool.

L. DRAGE,
Medical Officer of Health, Hatfield.

E. L. FOX,
Consulting Physician to the Royal Infirmary, Bristol; late Examiner in Medicine, University Oxford; Vice-president of the British Medical Association.

T. W. HIME,
Surgeon to the Hospital for Women; Lecturer on Midwifery to the Medical School, Bradford.

R. T. JONES, J.P., C.C.,
Medical Officer to the Poor-law.

R. J. KINKEAD, J.P.,
Professor of Obstetrics in Queen's College, Galway; Physician to the Galway Hospital.

R. MILNE MURRAY,
Assistant Physician to the Maternity Hospital; Lecturer on Midwifery at the School of Medicine, Edinburgh.

W. J. MOORE, K.C.I.E.,
Honorary Physician to Her Majesty the Queen; Honorary Surgeon to the Viceroy of India; Surgeon-General to the Indian Army.

P. REDFERN,
Emeritus Professor of Anatomy and Physiology in Queen's College, Belfast.

W. STOKES, KT.,
Surgeon-in-Ordinary to Her Majesty the Queen in Ireland; Surgeon to the Richmond Hospital, Dublin.

L. TAIT,
Consulting Surgeon to the Birmingham and Midland Hospital for Women.

W. THOMSON,
Vice-President of the Royal College of Surgeons in Ireland; Surgeon to the Richmond Hospital, Dublin; Member of the General Medical Council.

C. G. WHEELHOUSE, J.P.,
Consulting Surgeon to the Leeds Infirmary; Member of the General Medical Council; Vice-president of the British Medical Association.

W. WHITEHEAD,
Senior Surgeon to the Manchester Infirmary.

R. R. RENTOUL,
Liverpool.

To the Editors of THE LANCET.

SIRS,—Your leading article in THE LANCET of this week and the correspondence that has lately appeared on the subject bear pleasing proof that the question of legislation for midwives is now being considered on other than party lines, and that there is an attempt by the opponents and advocates of registration to find a way agreeable to both. It seems to be fairly well agreed that the present state of affairs is not to be tolerated and also that midwives must exist, for, putting aside fees, it would be practically impossible for the present number of medical men, even if they wished it, to attend all the confinements that take place; and if the number of medical men was sufficient there would not be sufficient general practice to support the medical men. The chief question at issue appears to be that of control—education and registration arranged. We still are confronted by the difficulty of individual control, which must be such that the midwife shall not usurp in any way the authority or position of the medical man, or practise beyond the limits that may be prescribed for her by law; this latter it is suggested and feared she will do for the purpose of her own pecuniary profit. With a view to prevent the possibility of this and at the same time to obtain the necessary control I would repeat my suggestion[1] that no midwife should practice except as the paid servant of some body, such as a board of guardians, a village nursing association, or a maternity charity; that these bodies should be compelled to adopt specified rules for her management and conduct; and that every such body should appoint a medical man or medical men as paid or honorary officer or officers, or make some arrangement for the payment of any medical man that the midwife may call to her assistance. I merely offer this as a suggestion for discussion. It appears to me a possible way of solving the difficulty of control and to remove the

[1] Brit. Med. Jour., 1895, vol. i., p. 1176.

chance of the danger that might arise from the greed of gain on the part of the midwife.

I am, Sirs, your obedient servant,

Freshford, April 27th, 1896. CHAS. E. S. FLEMMING.

THE BEAVEN RAKE MEMORIAL.

To the Editors of THE LANCET.

SIRS,—In response to a letter which you kindly inserted soon after the early and lamented death of Dr. Beaven Neave Rake, Superintendent of the Leper Asylum at Trinidad, a sum of £83 14*s.* has been collected. Of this sum 50 guineas were sent to Dr. Rake's widow, and the remainder will be presented to Mr. A. Lucchesi towards defraying the cost of a very beautiful bronze tablet which he has designed and executed, and which has been placed in the entrance hall of the Museum at Guy's Hospital. As there may still be some old Guy's Hospital men and other friends of the late Dr. Rake who may desire to add their names the subscription-list has not yet been closed. The names of those who have already subscribed are appended. The tablet allegorically represents "Medical Science" combating "Disease" and bears the following inscription:—

IN MEMORIAM
BEAVEN NEAVE RAKE, M.D. LOND.,
SUPERINTENDENT OF THE
ASYLUM FOR LEPERS, TRINIDAD, AND MEMBER OF THE ROYAL
COMMISSION OF INQUIRY INTO LEPROSY IN INDIA, 1892.
REMARKABLE FOR HIS SCIENTIFIC INVESTIGATIONS.
RESPECTED FOR HIS ZEAL AND HUMANITY, AND BELOVED FOR HIS
PERSONAL CHARACTER,
HE WAS CUT OFF BY FEVER IN THE
37TH YEAR OF HIS AGE,
AUG. 24, 1894.

We are, Sirs, yours faithfully,

PHIN. S. ABRAHAM,
2, Henrietta-street, Cavendish-square. } Hon.
GEO. R. BUCKMASTER, } Secs.
Fair Lawn, Teddington.
P. H. PYE-SMITH, Treasurer,
48, Brook-street, W.

List of Subscribers to Date.

Dr. Abraham, Dr. J. P. Atkinson, Dr. Blandford, Dr. Clifford Beale, Dr. Buckmaster, Dr. W. Carter, Mr. Jno. Cock, Mr. W. Collin, Mr. N. Davies-Colley, Dr. Floyd, Mr. J. Hutchinson, Dr. Horrocks, Sir George Humphry, Mr. W. H. A. Jacobson, Dr. Kanthack, Mr. W. Arbuthnot Lane, Mr. J. E. Layley, Dr. Pavy, Dr. S. Perkins, Mr. A. Pringle, Dr. J. Pringle, Dr. Pye-Smith, Mr. H. V. Rake, Mr. Thomas Smith, Dr. Stowers, Dr. Hale White, and Dr. Wilks.

April 24th, 1896.

"THE EFFECT OF MUSCULAR WORK UPON THE ALKALINITY OF THE BLOOD."

To the Editors of THE LANCET.

SIRS,—As Dr. Hutchison has now, no doubt, seen my reply to Mr. Fotheringham in THE LANCET of April 18th, showing that my results as regards the above heading agree with his own, I need not say anything further on that subject; but in his letter to THE LANCET of April 25th he raises one or two other points on which I should like to say a few words. With regard to the reaction of normal perspiration I know that the statements of authorities differ, and I have contented myself with quoting their statements and pointing out that a fall in the acidity of the urine always accompanies marked perspiration, whether this is due to muscular exercise or a Turkish bath, and that the converse fact that suppression of perspiration causes a rise in the acidity of the urine has been pointed out by Sir A. Garrod.[1] Dr. Hutchison's statement is also opposed to that of Heuss,[2] who distinctly says that normal sweat is acid at the time of its discharge from the ducts. Dr. Hutchison's suggested explanation of the early fall of urea which exercise may produce does not seem to me to meet the facts of the case, for this fall of urea, as well as the fatigue which accompanies it, can be prevented by controlling the uric acid,[3] but if exercise is always accompanied by formation of ammonia to neutralise acids then there should be a fall of urea in every case and we should be unable to control it. I would further point out that Auerbach[4] has shown that though the carnivora have the power of forming ammonia to neutralise acids, this power is only possessed by man and frugivora to a very insignificant extent, this probably accounting, as I have said in my book with reference to my experiments on the excretion of uric acid in dogs, for the very different reactions of the urine, and probably also of the blood, in members of these different orders, and furnishing also a somewhat powerful lever for the argument that man is not by nature a carnivore. I was greatly interested in Dr. Hutchison's paper, and if there had been any real antagonism between his results and my own I should have noted it carefully for further investigation. May I point out a misprint in my letter in THE LANCET of April 18th, where in line 8 "function" should read *formation?* I am, Sirs, yours faithfully,

Brook-street, April 27th, 1896. ALEXANDER HAIG.

[1] Gout and Rheumatic Gout, third edition, p. 258.
[2] Monatsschrift für Praktische Dermatologie, No. 9, 1892.
[3] THE LANCET, March 7th, 1896, p. 614.

JUVENILE SMOKING: THE DUTY OF THE MEDICAL PROFESSION.

To the Editors of THE LANCET.

SIRS,—Whoever is desirous of raising the status of the medical profession and of adding to its true dignity cannot do better than read the admirable address of Mr. Springthorpe, the President of the Public Health Section of the Intercolonial Medical Congress of Australasia, given in THE LANCET of April 25th. Mr. Springthorpe took a lofty view of the services which the physician can render to the State. In all matters relating to the preservation of the health of the people the nation looks to the members of our profession for light and leading. But we live by the treatment of disease; its prevention is in direct contravention of our interests. Nevertheless, medical men have not only never hesitated about sacrificing their interests for the public good, but they have been zealous and even enthusiastic in their efforts to promote the means of protecting and promoting the public health. The valuable and disinterested services thus rendered to the State have won for the profession much honour and no little dignity both at home and in the colonies. The profession has once more an opportunity of rendering a great—indeed, an invaluable—service to the State. Of late years an evil of the gravest kind has been extending in our midst, an evil which attacks not merely the physical but the mental and moral health of the nation. Juvenile smoking is spreading like an epidemic. Over twenty years ago the occurrence of sporadic cases induced the Editor of THE LANCET to speak out very plainly on the subject. He said: "Whatever opinions may be entertained as to the effects of moderate tobacco smoking on the adult, there can be none as to its deleterious influence on the boy. The molecular changes coincident with development of tissue are interfered with, slowed, if not arrested by tobacco." Facts were cited in proof of the physical injury thus caused, as were others clearly showing the mental damage inflicted. The experience of France and Germany was referred to, and the importance of hygienic instruction was urged. But since that time the evil has enormously extended. Lads are infatuated by the notion that the ability to "blow a cloud" is an indication of cleverness and it raises them considerably in the estimation of onlookers.

The advent of the cheap cigarette has, however, been the chief cause of the rapid spread of juvenile smoking of late. The Chancellor of the Exchequer in his recent speech on the Budget, referring to the large increase of revenue received from tobacco, said: "I believe it is mainly due to the great increase in the consumption of cigarettes, which are especially attractive to our youthful population." He added, "I am told of one manufacturer who makes two million cigarettes a day who hardly made any a few years ago." Thus it is not only that mere children are using tobacco, but they are using it in the worst possible form. Moreover, whilst most adults smokers are inclined to exercise some restraint over their smoking, the young are too apt to rush into extremes. It is impossible to estimate the injury which boys are thus doing to themselves. Surely something should be done, and done promptly, to put a stop to all this mischief. In some parts of Germany and in some of the United States laws have been passed prohibiting young persons under the age of

[4] Virchow's Archiv, vol. xcviii., p. 512.

xteen or eighteen from smoking and rendering it a punishble offence for anyone to give or sell tobacco to youths. Why should not the members of the medical profession move earnestly in this matter and urge on the managers of schools on the one hand the importance of special teaching, exposing the folly and viciousness of the practice of smoking, and, on the other hand, make such representations to Parliament and to the Government as may lead to efficient legislation? By taking the initiative the profession would do itself great credit and would serve the best interests of the country most effectively. I am, Sirs, yours faithfully,

R. MARTIN,
Senior Surgeon, Ancoats Hospital, Manchester.

April 27th, 1896.

THE QUESTION OF MEDICAL DEFENCE"

To the Editors of THE LANCET.

SIRS,—Referring to Mr. Keele's letter in THE LANCET of April 25th on the above subject, I cannot think that the medical profession will regard his objections to the absorption of the Medical Defence Union by the British Medical Association as sound ones. He objects to the formation of a gigantic trades-union and of the tyranny of the few over the many. Union is what the medical profession has been striving after hopelessly for years, and if it is a good thing at all the larger it is the better. As for the tyranny, when in the same issue of THE LANCET I see that one medical man advertises his advent by the village crier and others subsidise insurance agents to advertise their clubs at a penny a week or less, and while mangles and medical attendance are curiously mixed up together at Walsall, I cannot but think that a little wholesome advice and tyranny if necessary might be useful to teach some members of the profession to practise their calling in a way that does not degrade the whole profession in the eyes of the public. After the tyranny which the profession has suffered for years from clubs and provident associations the yoke of the British Medical Association will be but a feather weight.

I am, Sirs, yours faithfully,

Warsop, Notts, April 27th, 1896. E. S. NUTTING.

"THE BATTLE OF THE CLUBS."

To the Editors of THE LANCET.

SIRS,—The Friendly Societies Medical Alliance met at Wednesbury Town-hall on Monday, April 5th. The following resolutions affecting the profession were submitted to the meeting and carried *nem. con.*:—

1. That these institutions shall be called Friendly Societies Medical Institutions, leaving out the word "Aid" existing hitherto.
2. Persons of all grades, irrespective of position, are cordially welcomed to join.
3. That no annual reports of the work of the associations be published in which is shown the total value of property acquired or in which is shown the salaries paid to medical officers, the number of prescriptions dispensed or the visits made by the medical officers, as these figures have been used against the friendly societies' medical institutions by the medical profession, whose power for evil might have been much greater had the system of publishing statistics been more universal. [This proposition of the Kidderminster Association was carried unanimously.]
4. That the application of the medical officer of Tonbridge Wells Friendly Society be refused, and if any further dissatisfaction on his part be shown a month's salary be given instead of a month's notice. [The application of the medical officer here was to the effect that he considered the surplus capital at the year's end after defraying all legitimate expenses should revert to himself.]
5. That the Alliance should be registered, and that the Parliamentary representatives of the constituencies in which large associations exist be interviewed with a view to effecting certain proposals submitted to the last meeting, thus giving friendly societies greater power over the profession.
6. In towns where private practitioners decide to ask for more for adults and juveniles than the lodges pay at present, these clubs should attach themselves to one of the Friendly Societies Medical Institutions, and in the event of the non-existence of such an institution the disaffected clubs should form one and leave their surgeons *en bloc*.

[At this stage a telegram was received from Lincoln stating that the medical officers of the institution there had resigned. A reply was sent advising the management what course to adopt under the circumstances.]

7. That a deputation be formed, consisting of Alderman Dickinson (Lincoln), Mr. Willement (Norwich), and the President, to wait on the General Medical Council and seek their opinion on the question in dispute.

Now, Sirs, this bit of intelligence will doubtless be very interesting to the whole of the profession and especially to those who have clubs and who live in a town where a friendly societies institution exists. The profession here may now know what to expect. It will appear to all your readers that there is either a deal of Freemasonry or timidity when the Alliance resolve not to publish reports showing their numerical and financial position, what they are worth and what they pay their officers. This sort of thing will certainly not tend to a better understanding between the clubs and the profession. Let the General Medical Council not forget this when they are interviewed.

I am, Sirs, your obedient servant,

April 27th, 1896. SOPHOCLES.

P.S.—I may say that this Friendly Societies Medical Alliance is a conference of delegates sent from various friendly societies medical institutions, especially from those referred to by your Special Commissioner in the articles which have appeared recently.

THE ASHANTI EXPEDITION.

(BY OUR SPECIAL WAR CORRESPONDENT.)

IV.[1]

The Troops in Health, their Feeding, &c.

ON arriving at the top of the Monsi Hill, which I found by barometrical reading to be about 1122 ft. above the sea level, we had hoped to obtain an extensive view of the surrounding country, but we were greatly disappointed in this expectation on account of the impenetrable character of the tangled and prolific undergrowth which clothed its summit. Previously to our advance the pathway up the side of the hill was most irregular as well as precipitous in places, with huge boulders and stony projections barring the way and causing considerable inconvenience to anyone attempting the ascent. But thanks to the activity of our engineering party, the sappers of which worked like navvies, the bush was speedily cleared away where required, the stones removed, and a nice wide zigzag road was prepared throughout. Our troops were by this act of thoughtfulness on the part of the executive ultimately enabled to perform the journey up with comparative ease and comfort. The morning on which I crossed the range was beautifully fine overhead, with a soft, balmy air from east-north-east; while a thick white mantle of fog was observed to envelop and hide from view the whole of the country beneath us. About a mile from the top there was a sound of water rushing over some stony projection on our left flank. Desirous of ascertaining its whereabouts I halted my carriers and pitched my tent for the purpose of enjoying some refreshment, as I had partaken as yet of nothing since starting from Abru Edru. While my breakfast was being prepared by my coloured servant I was enabled to make an examination of the locality. Pushing my way through some very thick undergrowth, during which attempt I suffered considerably from the "lawyers" (thin canes with long barbed thorns), I managed after a brief search to come across quite a charming little cascade, over the ledge of which some beautifully clear, bright, drinkable water was foaming and tumbling into a tortuous narrow streamlet below. Just above the cascade was evidently the spring oozing out from under a large block of granite. The streamlet, pursuing a tortuous course down the northern side of the Monsi Hill, finally reaches Kwissa, and from it our supply was obtained for the rest camp of that place.

I have borne testimony to the hard work done by our men in Ashantiland more than once, but it does not necessarily follow from what I have said that a soldier's life (even during campaigning) is one of "all work and no play." It is no more one of incessant fatigue and hardship than it is one of "all beer and skittles," as Tommy Atkins would express it. He has his time for work as well as his time for rest and recreation, and unless untoward and extreme circumstances combine to prevent it he generally manages to secure his fair share of the two latter. I am not quite sure that he thinks so. He will sometimes growl. Grumbling is a permissible qualification not alone restricted to the army or navy but observable in other departments as well, and may as a characteristic of good sound health be considered a sort of safety-valve to let off the superfluous steam when necessary. But grumble or not as he may, our red-coat—as well

[1] Nos. 1, 2 and 3 were published in THE LANCET of April 4th, 11th and 25th, 1896, respectively.

as our blue-coat, too, for the matter of that—when he does turn to, goes at his allotted quota of work like a man, and only those whose duties have called them again and again to serve as correspondents with an army in the field, and have watched the all-round performances of our men abroad, can legitimately estimate the sterling worth of the British metal or appreciate the true ring of the coin as represented in the "stuff" of which our English army is composed.

As there were 26,000 medical sick comfort diets supplied for use to the recent expedition, I may here state what each medical comfort case consisted of: 1 bottle of brandy, 1 bottle of whisky, ½ bottle of champagne, ¼ lb. of arrowroot, ¼ lb. of pearl barley, 2 tins of extractum carnis, ½ lb. of bovril, 3 tins of condensed milk (sweetened), 2 tins of unsweetened milk, ¼ lb. of best tea, 3 lb. of white sugar, 1 lb. of candles, ½ lb. of soap, ½ lb. of salt, ¼ lb. of pepper, ½ lb. of compressed coffee, ½ lb. of pea soup, ¼ lb. of mustard, besides a good corkscrew, knife and fork, tin opener, nest of three hospital measures, pepper castor, and mustard pot. At sea when on board transport ships the soldier's rations, including a free allowance of good drinking and washing water, are daily as follows:—

Sunday.—12 oz. of salt beef, 6 oz. of flour, 1 oz. of suet, 2 oz. of raisins, 12 oz. of biscuit, 4 oz. of sugar, ½ oz. of tea, and 2 oz. of preserved potatoes.

Monday. 12 oz. of preserved meat, 1 lb. of fresh bread, 4 oz. of rice, 2 oz. of sugar, and ½ oz. of tea.

Tuesday.—12 oz. of salt pork, ⅔ lb. of split peas, 1 oz. of vegetables, 12 oz. of biscuit, 2 oz. of sugar, and ½ oz. of tea.

Wednesday.—12 oz. of salt beef, 6 oz. of flour, 1 oz. of suet, 2 oz. of raisins, 1 lb. of fresh bread, 4 oz. of sugar, ½ oz. of tea, and 2 oz. of preserved potatoes.

Thursday.—12 oz. of preserved meat, 12 oz. of biscuit, 2 oz. of sugar, ½ oz. of tea, and 2 oz. of preserved potatoes.

Friday.—12 oz. of salt pork, ⅔ lb. of split peas, 1 oz. of compressed vegetable, 1 lb. of fresh bread, 2 oz. of sugar, and ½ oz. of tea.

Saturday.—12 oz. of preserved meat, 1 lb. of fresh bread, 2 oz. of sugar, ½ oz. of tea, and 2 oz. of preserved potatoes.

From a perusal of the foregoing it will be seen that the quantity of food served out to our soldiers is ample in quantity, if it be not always excellent in quality. Having had opportunities for years past of judging of the character of the provisions I should unhesitatingly say they are, as a whole, remarkably good and very little fault can be found with them. The tea used by the troops in the last expedition was pronounced excellent. The biscuits, although hard, were found to be of superior quality and were consumed for some time after leaving Cape Coast Castle—until, in fact, our camp bakery was established. When that department was got into working order fresh bread was served out to the men. I was presented with the first loaf baked, and it proved to be an excellent specimen of what our commissariat bakery can turn out. Unsweetened milk was chosen in preference to sweetened. It seemed to stand the heat better than the latter, which frequently passed into a state of butter. It was anticipated that during the march up country any quantity of animal and vegetable food would be procurable by purchase from the friendly natives, but in this hope we were sadly disappointed, and therefore the commissariat had wholly to rely on their stock of preserved provisions. No fresh meat of any kind could be obtained this side of Kumasi. At that place two days' rations of beef were, I believe, given to our men. Therefore tinned meat had to be consumed not only *en voyage* but also during the greater portion of the time the troops were on shore. Now very often a little of this preserved nitrogenous food "goes a long way" and not infrequently it turns out dry and stringy, as if all the juice had been squeezed out of it; and there is, moreover, a decided absence of fatty matter to render it as palatable and nourishing as it should be. In temperate climates men's appetites are good if they are in a fair state of health and they can eat well and relish whatever is put before them. When serving in the tropics, under a depressing and enervating temperature, appetite fails and becomes capricious to a degree, and it is just at such periods that something out of the usual routine is required; and if there was one kind or class of food more than another that helped to supply this desideratum during our recent campaign it was, I think, found in Maconochie's ration, recently introduced, and a small supply of which was served out to our officers and men. There was one complaint made concerning it as far as I could gather, and that was that "there was not nearly sufficient" to satisfy the demands of the men. For my own part, I have never been much impressed with the luxury of preserved meat of any kind, and felt some reluctance in asking for a supply of it from the authorities. But not being able to procure either a modicum of mutton, fowls, or even eggs from the natives in the villages through which we passed—all the sheep, chickens, and even pigs being driven away into the bush on the approach of our troops—I was compelled in dire necessity to requisition something eatable from the Government food stores. Amongst other things generously supplied were two tins of the ration above referred to. Contrary to my expectation the contents of each tin furnished quite a tender, juicy, savoury, nutritious and very sustaining meal, widely different from the stringy, tasteless preparations, without fat or any juice whatever, which had hitherto been tolerated for want of a more acceptable article. This ration appears to be a combination of moderate-sized pieces of beef, very tender, evidently cut from the primest parts, judiciously cooked (not done to rags), together with carrots, onions, and potatoes, conserved in delicious, well-seasoned gravy. There is, moreover, a certain quantity of fat introduced, and the necessary juices so essential for perfect mastication and assimilation are retained throughout the diet. In other preparations of the kind where vegetables have been conjoined the latter have turned out in a mashed-up and pulpy condition. Not so in Maconochie's; by some agency or other the pieces of vegetable are preserved in a solid and unbroken form. Every tin, moreover, contains a suitable quantity of nice brown gravy free from supernatant fat, and, from what I can judge, is equal to about half a pint of good beef-tea. No bone at all is introduced, therefore every twelve ounces of beef are equal to about seventeen ounces of meat supplied with bone. Each tin, I have ascertained, contains at least twelve ounces of good solid meat and weighs, with the vegetables and gravy, about one pound and three-quarters. Although animal and vegetable substances are incorporated in this meal the combination keeps quite fresh without any signs of fermentation being apparent, and seems to have withstood the effects of even a West African climate well enough. The bodily health- and strength-maintaining essentials in the shape of albuminoids, starchy, and fatty matters are one and all represented in the various items of its composition and so nicely blended that many of our invalids out in Africa were not only able to eat but, what is more essential, digest some of the meat minced up with its gravy and some breadcrumbs when in consequence of the capricious state of their appetites they could not touch other kinds of diet as served out to them.

BIRMINGHAM.

(FROM OUR OWN CORRESPONDENT.)

A Centenarian.

INSTANCES of exceptional longevity do not always stand the test of inquiry when closely applied to the antecedent history of the individual. Lately, however, there died in this locality one Antoine Mountsoy who on Jan. 6th completed his 109th year, the record being an authentic one. This remarkable veteran was born at Bordeaux in 1787, and when a boy was taken prisoner by the English with his father. He remained in England when his father returned to France and served in the navy five years. He worked a quarter-deck gun on board the *Queen Charlotte* at the Battle of Algiers in the year 1816, being badly wounded. He subsequently served on a whaler and after many hardships settled down eventually near Lichfield as a small carrier. He was well known and respected in the district. At his funeral on April 22nd Captain the Hon. A. C. Littleton, chairman of the Lichfield board of guardians and a naval officer, sent a Union Jack to be placed on the coffin of the old man as a tribute of respect to the memory of his former service.

The Pollution of the River Tame.

The recurring alleged pollution of this small river by the Birmingham Tame and Rea district drainage board has been a source of perpetual trouble to the authorities concerned. At the recent annual meeting of the Tamworth rural district council the difficulties of the subject were freely discussed. The district council expressed the opinion that the river was now in a condition so dangerous to health that in case of

some epidemic disease the mortality arising therefrom would be very serious. Both the district and urban authorities asked that an inspector of the Local Government Board should view the stream. In reply to this the clerk stated that he was informed by the department that the Board had during the last few years sanctioned the borrowing of large sums of money by the Birmingham Tame and Rea district drainage board to enable them to acquire further land to improve the effluent from their sewage farm, and the information in the Board's possession showed that the drainage board were aware of the necessity of carrying out the improvement. In reply it was stated that the amount of land the drainage board had at present for sewage treatment was utterly insufficient. At the inquiry before an inspection held in April, 1895, for leave to purchase 187 acres, the farm manager stated "that the sewage of 718 persons was at the present time dealt with on each acre of land, but the number ought not to exceed 400, and that the board then had 380 acres upon which to apply sewage and he should like the number increased to 1600." This would mean 720 acres more for sewage treatment than they then had. Some further correspondence was read in which the department replied that they were not prepared to direct an inquiry as suggested. It was decided to ask the Local Government Board to receive a deputation from the district council on the matter. Failing this it was intimated that the local Parliamentary representatives would be asked to bring the matter before the House of Commons.

Record Number of Summonses.

On April 14th the largest number of summonses on record was down for hearing at the Victoria courts. They reached the total of 178. Many of these were of minor importance, the mania for playing football in the public streets being responsible for 55. The preservation of order in the midst of a large town is indispensable to comfort and to progress; and the activity of the police towards this object is a laudable effort to promote good local government.

Inquests.

An inquest was lately held at the gaol on the body of a prisoner aged fifty-five whose death occurred under singular circumstances. The deceased persistently ate the peels of potatoes which had been cooked by steam. He was warned of the risk by another prisoner, but continued to indulge his taste for this exceptional kind of diet. Diarrhœa followed, then peritonitis and death. Previous slight chronic inflammation of the intestines was stated to have been the ground for the additional disease which was aggravated by the indigestible material.—The coroner has also held an inquest upon a child fourteen months old who endeavoured to swallow a piece of beef-steak, but failed in the attempt and died from asphyxia. Evidently information in the matter of feeding is further required among a number of people.

April 28th.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Crisis at the Lying-in Hospital.

THE deadlock at this hospital still continues. It will be remembered that the bulk of the medical staff resigned in consequence of the determination of the committee to make the matron-midwife responsible for the treatment of all normal cases, which the latter body assert is in accordance with the rules of the charity, an interpretation controverted by the medical staff. A meeting of the subscribers was called to afford them an opportunity of putting their interpretation on the rules in dispute, at which the following resolution was carried by 22 votes to 2:—"That, whilst recognising the responsibility of the Medical Board through the honorary hospital medical officer on duty for the general supervision of all medical matters in connexion with the hospital, the subscribers regard the executive responsibility for the attendance upon normal cases as resting with the matron-midwife." Mr. J. K. Smith, in moving this resolution, remarked that "for a medical man not to be allowed to enter the wards with the object of supervising the antiseptic treatment was all nonsense"; while Mrs. H. Tate, a lady evidently endowed with much common sense, expressed her opinion that "no honorary medical officer could accept the position of being responsible for life and death in an institution to the wards of which he was denied access." Other speeches followed, after which the meeting dispersed leaving matters in a hopeless muddle. The absurdity of the situation was evidently felt by the committee in the fact of their meeting together immediately afterwards to put an interpretation on their own resolution, which reads as follows:—"That in the opinion of the committee the resolution (meaning that carried at the subscribers' meeting) is sufficient to confer upon the medical officer in charge the right of access to all wards for the purpose of carrying out the general supervision referred to." If this reading does not imply that the medical staff are to control the treatment of all cases, normal and otherwise, then the English language conveys no meaning whatever, yet when the medical staff, in reply to an invitation from the committee to allow themselves to be re-elected, say that they are agreeable, now that their responsibility for all hospital patients is established beyond shadow of doubt, will it be believed that the committee reply by saying that they "cannot agree to relieving the matron-midwife of the full responsibility of all normal cases, as they have complete confidence in her ability to tell whether a case is normal or otherwise"? It will not be wondered at that the staff, in reply, say that they cannot accept the position laid down by the committee, and that unless their responsibility for all cases is fully acknowledged (by the fact of the matron-midwife acting under their orders without reserve) they must definitely decline to offer themselves for re-election.

Death of Dr. John McGregor.

Dr. John McGregor, who some years ago enjoyed a lucrative practice in Everton, but latterly had been in failing health, was drowned in the Mersey on Tuesday week. Deceased was educated at Glasgow University, of which he was Doctor of Medicine, also possessing the Fellowship of the Royal College of Surgeons of Edinburgh. He was sixty-two years of age.

The New Northern Hospital.

At last a satisfactory stage has been reached in the progress of arrangements for rebuilding the Northern Hospital by the selection of the competition plans submitted by Messrs. Pennington, Son, and Harvey, architects, of London and Liverpool. The new hospital is designed to contain 200 beds, the existing one possessing only 157 beds. The site measures 11,000 yards. The style of architecture is that of English Renaissance plainly treated, and will be simple and neat rather than possessing external grandeur. The hospital, which will be a model of its kind, will include two large longitudinal pavilions three storeys high. The administrative block will form the centre with the principal entrance to the building which will be approached by a circular drive from the main street. It will contain a handsome entrance-hall and every convenience for the accommodation of the officials. A nurses' home to accommodate sixty nurses connected with the main corridor, giving access to all parts of the building, will be erected at the corner of Great Howard-street and Leeds-street. At the back of the main corridor will be a circular pavilion, also three storeys high, for the provision of operating and lecture theatres and the out-patients' department; there will be a separate entrance and exit to this part of the building. A feature of the new hospital will be the fitting up of three special wards with tanks for typhoid fever patients. At the rear will be placed the laundries, boiler-house, disinfecting-house, &c., with the mortuary and post-mortem room in another block. The building will be fireproof, whilst the heating, ventilating, and sanitary arrangements will be as perfect as possible. It is the intention of the committee to arrange to give the public an opportunity of inspecting the plans.

Glanders and the May Day Procession.

At the recent weekly meeting of the Health Committee the chairman said the May Day procession was postponed until it was quite certain there was no danger to be feared on account of glanders. The medical officer of health stated that the action taken in the matter was precautionary.

April 28th.

THE lectures at the National Hospital for the Paralysed and Epileptic, Queen-square, will be continued on Wednesdays at 3 o'clock, as before, but a larger number of members of the staff will take part in them. Dr. Gowers will begin on the 6th inst.

WESTERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

Bristol University College: an Appeal for £10,000.

THE Council of University College issued last week an urgent appeal for pecuniary assistance to the inhabitants of Bristol and the West of England. It is stated that since the last appeal was made, in 1887, a new medical wing has been built at a cost of £7590, an event followed by the complete incorporation of the medical school with the College, and an engineering wing was added at a cost of £5460. The council earnestly appeal for a capital sum of £10,000 to clear the College from debt and for an addition to the annual sustentation fund of £700, which would restore that fund to the £1200 subscribed in 1882, not less than which is required to meet the annual expenditure and to secure the Government grant. The council also emphasise the need of a permanent endowment, and suggest that wealthy citizens of Bristol and the West should associate their names, as in other colleges, with the endowment of professorships. The donations already promised for the capital fund amount to £5334, and to the sustentation fund about £100. At a recent meeting of the Technical Education Committee of the Bristol Corporation it was decided to recommend the Council to make a grant of £2000 to the funds now being raised on behalf of the College, to be conditional upon the £10,000 being obtained and on the acceptance of two representatives of the Town Council upon the governing body.

The Installation of the Prince of Wales as Chancellor of the University of Wales.

At a meeting of the University College of Wales, held in Cardiff last week, a communication was read from Sir Francis Knollys intimating that the Prince and Princess of Wales proposed to arrive in Aberystwith on June 25th, and, if agreeable, His Royal Highness suggested that his installation as Chancellor of the University should take place on the following day in that town. This date was considered most suitable, and it was decided that the installation should be conducted in a congregation of the authorities of the University. It has also been definitely arranged that the opening of the new residential hall for women in connexion with the University shall take place on the occasion of the forthcoming Royal visit, the Princess of Wales having graciously consented to perform the ceremony.

Lord Edmond Fitzmaurice on Vaccination.

At the meeting of the Bradford-on-Avon (Wiltshire) urban council on April 21st, when there was a strong expression in favour of vaccination, Lord Edmond Fitzmaurice said that he had not the smallest doubt that vaccination was one of the greatest scientific discoveries ever made. He looked upon the present agitation, and felt it his duty to say so, as having gone altogether beyond the question of compulsory vaccination; it was an attack upon vaccination itself, against the boards of guardians, and against the magistrates who enforced the law—in fact, in some places it had become almost a system of intimidation. It was time the working classes should have information on the other side placed before them.

Outbreak of Rabies at Weston, near Bath.

In consequence of an outbreak of rabies at Weston (near Bath) the market committee of Bath at a special meeting made an order for the muzzling of all dogs in the city; this came into force on April 20th last.

The Expenditure of the Bristol Public Health Department.

At the meeting of the Bristol sanitary authority, held on April 16th, it was stated that the expenditure of the Public Health Department for the half-year ended March, 1896, had been as follows: medical officer's department, £2237 14*s.* 2*d.*; hospital expenses, £1167; port sanitary account, £641; and Housing of the Working Classes Act, £908.

Conversazione of the Bristol University College.

The chairman and council of the Bristol University College gave a conversazione at the Victoria Rooms, Clifton, on April 20th. Scientific lectures and experiments were provided, and an opportunity was taken to impress upon the large number of citizens who attended that the College was greatly in need of increased financial help.

The Cheltenham Board of Guardians and Vaccination.

The Cheltenham board of guardians at a full board on April 23rd, after a discussion extending upwards of four hours, decided to rescind the resolution passed in 1894, so in future legal proceedings will be taken against all defaulters under the Vaccination Acts.

The new Infectious Diseases Hospital for Newport is to be opened in June.

Last week the sudden death occurred at his residence, "Sunny Lee," Weymouth, of Surgeon-Lieutenant-Colonel Richard William Hare, who was on the Retired List of the Army Medical Staff.

April 25th.

SCOTLAND.

(FROM OUR OWN CORRESPONDENTS.)

Death of Dr. A. F. Wood.

FRIENDS in the medical profession will hear with regret of the death of Dr. A. F. Wood, medical superintendent of the Edinburgh City Hospital. Dr. Wood died after four days' illness from acute pneumonia at the comparatively early age of forty-eight years. During his student days he showed a preference for the study of infectious diseases, and in 1878 was appointed house physician to the fever wards of the Old Infirmary, while in 1885 he was appointed by the town council to the post of superintendent of the City Hospital, which he held until his death. The funeral took place on the morning of April 24th and was attended by the Lord Provost and other members of the town council, as well as by a large number of the members of the medical faculty in Edinburgh and nurses from the city hospital. Dr. Wood had acquired great experience in the diagnosis and treatment of infectious diseases, and from his kindly, courteous, and obliging manner was much esteemed by the officials with whom he was associated and also by the friends of patients with whom he was brought in contact.

Edinburgh University General Council.

The statutory half-yearly meeting of the general council of Edinburgh University was held last week, the vice-chancellor, Sir William Muir, presiding. The report of the finance committee, presented by Mr. D. D. Beechan, S.S.C., expressed the satisfaction of the committee that the trustees of the late Earl of Moray had allotted to the University Court as a capital endowment fund for the promotion of original research in the University the munificent sum of £20,000. This sum, however, was by itself quite inadequate to equip the University for original research, and as there are no other funds at present at the disposal of the University Court by which to supplement it the committee suggest that a plan of coöperation with the Royal Colleges of Physicians and Surgeons of Edinburgh might be devised, by means of which the laboratories and endowments of the three bodies might be worked together instead of being in competition with one another. The committee stated their regret that the General University Fund showed no increase in capital, the figure being £70,000, practically the same as it was last year. They considered it unsatisfactory that so often money given to the University was appropriated by the donors to special purposes instead of being entrusted to the administration of the University Court. One of the members called attention to the falling off in the number of students at the University. He thought it very unfortunate that the professors were now entirely independent of fees, and thought there was some relation between this fact and the falling-off in numbers. He was glad to see that the committee recommended that there should be a stop put to the practice of allowing grants to the professors for laboratory and class expenses. Dr. Scott Dalgleish attributed the falling off in the number of students rather to the increased requirements in the preliminary examination.

Opening of Filters at Stirling Waterworks.

The four filters which have been constructed at Zouch in connexion with the Stirling waterworks were formally opened last week by Provost Kinross. The filters measure each 76 feet by 52 feet; there are also two clear-water basins 100 feet in diameter, the whole being made of enamelled brick. The works have cost upwards of £13,000.

Edinburgh Field Naturalists' Society.

At the concluding meeting of this society in Edinburgh last week Dr. Watson submitted a communication on recent observations by Dr. Cunningham, Professor of Physiology, Calcutta, on the nature of snake poison. Dr. Cunningham's investigations went to show that the lethal properties of cobra-venom were due to the presence in it of a single toxine of the nature of a ferment which altered the blood so as to make it unfit for the part it played in respiration, while the lethal properties of daboia venom were due to two toxines, not ferments, the one acting as a nerve irritant and the other by inducing septic alterations in the blood.

Death of Dr. Anderson, C.B.

The death took place on Sunday at Pitlochry of Dr. Anderson, C.B., retired Inspector-General of Her Majesty's Hospitals, at the age of eighty-one. He entered the army in 1838 and served sixteen years in the 82nd Foot, 10th Hussars, and 2nd Battalion of the Rifle Brigade in the Mediterranean, Canada, &c. He was appointed surgeon-general in 1854 and passed through the experiences of the Crimean War, having been present at the battles of Alma, Balaclava, and Inkerman, and at the Siege of Sebastopol. He was engaged in the war with China and subsequently served in India as principal medical officer in Bengal. When he returned home he received the appointment of principal medical officer of Netley Hospital. Dr. Anderson had the honour of being created a Knight of the Legion of Honour and a Companion of the Bath, and possessed the Crimean medal with four clasps, Turkish medal, and China medal and clasp.

St. Andrews University.

The Berry Scholarship in Natural Science has been awarded to Mr. Harry M. Kyle, M.A., B.Sc., Glasgow, and the Woodhall Fisheries Prize to Mr. Wm. Wallace, also of Glasgow.

Glasgow University.

The summer session opened on April 21st, and all the classes are now in full operation. The exact number or entrants cannot yet be stated, but as the results of the preliminary examination were much more favourable than in former years larger first-year classes are to be expected. Professor Simpson's health has so far improved that he is able to conduct the class in Forensic Medicine.—Dr. M. Charteris, Professor of Therapeutics, has been elected a Fellow of the Royal Society of Edinburgh.—The session at Anderson's College also opened on April 21st and at St. Mungo's College on April 24th.—Two new courses are announced at the Western Medical School, one on Regional Anatomy by Dr. Edington and one on Physiology by Dr. Ernest Thomson.—Dr. Pearson Munro, in consequence of ill-health, will not be able to conduct his class on Public Health in Anderson's College during the present session.

Lightburn Hospital, Lanarkshire.

The new hospital which has been erected for the purpose of dealing with cases of infectious diseases from the lower and middle ward districts of Lanarkshire was formally opened on April 23rd by Mr. Henry Taggart, convener of the joint committee. The hospital has been designed upon the most modern and improved principles. It contains accommodation for sixty beds, and the total cost, including the site, is estimated at £29 000. There is a complete installation of the electric light, and the hospital is provided with the Alliott-Paton patent Lyon's steam disinfecting apparatus. The opening ceremony took place in the presence of a number of representatives of the local health authorities and of the profession. At the lunch which followed the toast of "The Local Government Board for Scotland" was responded to by Dr. McLintock. The medical superintendent of the new hospital is Mr. Philp.

The Mild Weather.

As evidence of the mildness of the season Mr. Alex. Somerville, B.Sc., a well-known member of the Glasgow Naturalists' Society, announces that during the first week of April he collected fifty-eight species of wild plants in flower in the island of Arran.

A Medical Dispute.

A curious position has issued from a difference of opinion between two practitioners in a burgh in the west of Scotland. Dr. A. certified a case of enteric fever and sent the patient to the burgh hospital. Admittance, however, was refused, as Dr. B., who had charge of the hospital, diagnosed the case as one of meningitis. Dr. A., in no wise convinced of this view, sent for a consulting physician from Glasgow, who had no doubt the case was really one of enteric fever. Now Dr. A. maintains that the consultant's fee of 10 guineas is an expense to which he has been put by the burgh medical officer, and accordingly he claims that the town council ought to refund him this sum.

Presentation to a Medical Man.

The members of the ambulance class in connexion with the Possilpark district of Glasgow have presented Dr. J. S. Muir with a handsome dressing-case as an indication of their appreciation of his services as lecturer.

April 28th.

IRELAND.

(FROM OUR OWN CORRESPONDENTS.)

The Mourne Water Scheme for Belfast.

IT was in August, 1893, that the Belfast Water Act, which authorises this new scheme, received the Royal Assent. It is to supplement the present supply of water from Carrickfergus on one side of the city and Stoneyford on the other. At present the resources of the water commissioners give 11,000,000 gallons of water per day, and this, it is thought, will supply the city of Belfast under the usual circumstances until 1900. But the demand for water, owing to the remarkable growth of the city, is increasing every week, and the new Mourne supply will not be ready a day too soon. The Mourne gathering-ground contains over 9000 acres, and is at present drained by the two rivers Kilkeel and Annaling, which empty into the sea at the small towns of the same names in the southern part of county Down. Large reservoirs will be constructed in this area, which, if necessary for the city, can be doubled. At present the Commissioners are proceeding to construct the main aqueduct between the Kilkeel river and the Knockbracken service reservoir, which will be within a few miles of Belfast. This aqueduct will be 35 miles long, and while ultimately capable of taking the full product of the Mourne district—30 million gallons of water per day—the syphons will at first be laid with single pipes, which will carry 10 million gallons per day. Of the whole length of this aqueduct there will be 7 miles of tunnel, 16 miles of cut and cover, and 12 miles of syphon pipes, all 36 in. in diameter. The service reservoir at Knockbracken, about 5 miles from Belfast, the capacity of which will be 90 million gallons, is now in the process of construction (the contract is £35,000). From it the water will be conveyed under pressure by large mains to Belfast. The firm which is building the reservoir is also constructing 11½ miles of the main aqueduct between the reservoir and a point about two miles from Ballynahinch. Of this aqueduct one-third will be tunnel (it will be the longest work of the kind in Ireland, about 3½ miles), another cut and cover, and a third cast iron syphon pipes. At present the men are busy at this tunnel and the other parts of this portion of the aqueduct, and it is to cost £153,000. The pipes for the syphons are being made in Glasgow and will cost £21,000. The inlet ends of these pipes will be controlled by automatic valves, and by means of these the water will be immediately cut off in case of a breakage in any part of the syphon, thus reducing the chances of possible damage. Within the last few weeks the other end of the aqueduct—the Newcastle section—which begins at a place well known to tourists, the Bloody Bridge, and which covers about 11½ miles in all, being made up of 7 miles syphon, 2 miles of cut and cover, and 2½ miles of tunnel, the last-named passing under the highest of the Mourne range of mountains, Slieve Donard, was contracted for by a Belfast firm, the amount being £95,000. Work at this part will shortly begin, and in a few weeks about two-thirds of the whole length of the aqueduct, as well as the service reservoir, will be under construction. It will not be long before Belfast has a water-supply equal to its extraordinary size and rapidly increasing growth.

Queen's College, Belfast.

For some time it has been felt that the usual time of commencing the winter session at Queen's College, Belfast, has been too late; it has therefore been decided that next year, 1896–97, the medical classes will begin on Oct. 20th

and terminate on March 31st. The present summer session begins on May 1st. Two additional lecturers will shortly be appointed by the College council on Ophthalmology and Hygiene, as it is necessary that a course of lectures should be given next year in these subjects in order to qualify students for the examinations of the Royal University of Ireland.

Triennial Visitation at the Queen's College, Cork.

The triennial visitation was held on Tuesday last at the Queen's College, Cork, and, as had been expected, the Visitors present were Mr. Justice O'Brien (chairman), Dr. Grimshaw (President of the Royal College of Physicians of Ireland), and Sir W. Thornley Stoker (President of the Royal College of Surgeons in Ireland). The only appeals made to the Visitors were those of the Medical Students' Association, and had reference mainly to the anatomical department. The requests coming under that head were the following: that the dissecting-room should be open from nine o'clock to six o'clock instead of being closed at four o'clock as is the case at present; that the dissecting-room ought to be kept open during the summer session; that the number of demonstrators should be increased; that students who had already attended the requisite number of courses of anatomy should be allowed to dissect on paying a reduced fee; and that students similarly circumstanced should have the privilege of visiting the dissecting-room without being obliged to pay any fee. The Visitors considered that the dissecting-room ought to be kept open until six o'clock, and they referred back to the Council the question of having dissections included in a summer session. Sir W. Thornley Stoker was very strongly of opinion that it would be better to have one demonstrator who would devote his entire time to his duties rather than that the responsiblity should be divided between three or four, whose attention would probably be more or less absorbed by private practice in the city, and the Visitors decided accordingly. With regard to the payment of a reduced fee for dissections the Council had ruled that they were not in a position to interfere, but Mr. Justice O'Brien interpreted the statute of the College bearing on the subject differently, and the Visitors decided that whilst they considered a fee of £3 a moderate one for an ordinary course of dissections a student not requiring a certificate should be allowed to dissect on paying £2, plus the ordinary dissecting-room expenses. With reference to the admission to the dissecting-room of students who did not propose to take out a further course of dissections Sir W. Thornley Stoker stated that all teachers of anatomy are opposed to such a procedure as one calculated to interfere with the discipline of the dissecting-room, and he incidentally mentioned that such students are in Dublin called "navigators." The learned judge, when giving the decision of the Visitors, humourously said that they could give no assent to that kind of navigation. After some other questions had been considered Mr. Justice O'Brien stated that although the natural zeal for change and improvement of the students had brought under their notice matters not unworthy their consideration, still they were constrained to say as their opinion that they had revealed very few defects of any kind existing in the institution, and such as were revealed were capable of correction by them. Referring especially to the medical school of the College he said: "There can be no doubt that this College of the city of Cork retains its distinction as a great medical school. It has already furnished a very large number of professional men to different parts of the world, and I am very happy to say that in the opinion of my colleagues, who have, by zeal and acquirements, obtained such high distinction in both branches of the medical profession, this school of medicine and surgery in the city of Cork furnishes the means and opportunity of instruction which cannot be exceeded in any similar institution in any part of the United Kingdom."

April 28th.

ROME.

(FROM OUR OWN CORRESPONDENT.)

"Homicidal Explosion" in the Army.

WITHIN the last two years five cases of what Italian alienists classify as "homicidal explosion" have occurred in garrison life throughout the kingdom and a sixth was added to the number yesterday. This was at Palermo, where a private soldier named Fagioli of the 39th Battalion of Africa, in convalescence with several comrades in the regimental infirmary, suddenly seized a loaded rifle and discharged it at his corporal, who had just entered. Fortunately the intended victim's cap received the shot, no further injury being done; but before this was ascertained Fagioli's comrades fled in panic, followed by the corporal, while Fagioli barricaded himself in the room. There he remained, meeting all requests to open the door with the threat that he would shoot dead the first man who entered. Another door admitting to the room was then forced and Fagioli fired no fewer than twelve shots at the soldiers as they appeared at the doorway, but without inflicting any wound. He was then fired upon in turn, four bullets lodging in his head and spine, and thereafter conveyed to the hospital in a dying state. His motives can only be guessed at. All that is positively known of him is that he was a neurotic subject, of "cattivi precedenti" (bad record), and had undergone several terms of punishment for previous convictions. The Italian War Office has for some time been in conflict with medical authority as to how to view these cases and how to prevent their recurrence. Before the military court where they have been tried expert evidence by some of the first alienists of the kingdom has been given, clearly showing by every test, anthropometric and other, that the delinquents were, each and all, "moral imbeciles" whom a properly qualified inspecting authority would have, *ab initio*, excluded from the service. But no; the medical witnesses were respectfully listened to and their findings quietly ignored; the delinquents were found guilty of breach of discipline of the most aggravated kind and shot through the back in presence of their comrades. The sentence, followed by summary execution, has proved absolutely without deterrent effect, and for reasons amply set forth by the medical witnesses. The delinquents were in their view morally irresponsible from defective organisation physically and perverted development mentally—conditions easily ascertainable by inspection on their entering the ranks. But such inspection is a long way from being recognised as feasible or tolerated as admissible by the War Office. The conscription has undoubtedly many drawbacks as compared with the voluntary system of the British Isles, and one of them is the danger of accepting moral defect or criminal propensity as a bar to service. For, say the military men, as the eligible recruit, to avoid the conscription, will injure hand or foot to disqualify himself, still more easily would he commit a crime or pose as a "moral imbecile" for the same end. To recognise such "antecedents" as a bar to military service would put a premium on crime in Italy, already far too prone without such temptation to indulge in it. There is force in this argument, but not enough to meet the contention of the anthropological school. Why not begin ten or twelve years earlier in the young conscript's life? Why not take him at, or just before, entering school and subject him then and there to the tests, anthropometric and other, which science has reduced to such perfection? I need not recapitulate the proposals submitted by the Sub-Alpine and Lombard medical authorities particularly to the Education Office as worthy of being put in practice in the elementary schools throughout the kingdom. These have from time to time been published in THE LANCET and vindicated from the charge of "Utopianism" inconsiderately brought against them by the lay public. *Principiis obsta* holds good in the moral development as well as in the physical, and the whole future of Italian life, whether of the civilian or the soldier, is bound up in its due and vigilant observance. With "a murder every two hours" in civil life, and such wholesale outbursts of homicidal impulse as those of Misdea and other "moral imbeciles" admitted to service and to the use of lethal weapons, the wonder is that Italian population maintains the yearly average statistically noted, and that the annual loss of life in barracks and on a peace footing is not proportionally greater than that caused in a hostile country and on the stricken field.

April 26th.

THE seventh ordinary general meeting of the Sanitary Inspectors' Association (session 1895–96) will be held on Saturday, May 2nd, 1896, at 6 P.M., at Carpenters' Hall, Throgmorton-avenue, E.C.

NEW YORK.

(FROM OUR OWN CORRESPONDENT.)

"Filled Cheese."

CONGRESS is engaged in the discussion of a Bill for the regulation of the manufacture of what is known as "filled cheese." This article, of which upwards of 12,000,000 lb. were manufactured last year, is an imitation of cream cheese and has been sold in the market as such. It is the result of the new method of separating the fatty substance from the new milk by centrifugal force and substituting other fats in the milk thus relieved of its natural fat. After taking leaf lard and subjecting it to a certain heat so that it becomes oil, and mixing a certain number of pounds of that with a hundred pounds of this milk, the subsequent process of manufacture is the same as that of other cheese. At different stages of the development of this industry various other fats and oils have been used, including oleo oil, margarine, cotton oil, and unmerchantable butter, as well as others still cheaper and of doubtful origin. In the process of manufacture the bulk of the milk is raised to the same temperature as in making ordinary cheese, while part of the milk and all of the lard are raised to a temperature of at least 200° F. The liability to use raw materials containing the germs of disease is about the same in making genuine cheese as in making filled cheese. The filled cheese is made and placed on the market without any brand or marking indicating its real nature. The sole object to be obtained by legislation is to prevent fraud by compelling the manufacturer to place on the package of filled cheese the name of the article.

The Vomito in Cuba.

According to recently published statements it appears that the greatest losses suffered by the Spanish army in Cuba are caused by the vomito, a disease which is a kind of yellow fever and which is deadly to the people and soldiers newly arrived on the island. From March 1st, 1895, to the present date the number of deaths in the military forces sent by Spain to suppress the Cuban revolution amounts to 3877. No less than 3190 of these deaths were caused by the terrible vomito. The rest were caused as follows: 886 men were killed on the battlefield, 119 died from wounds received while fighting, and 282 died from ordinary diseases. If this statement is correct the mortality did not exceed 4 per cent., which is much below that of the late war in this country and that of the French troops in Tonquin and Madagascar.

The Medical Corps of the Navy.

The Surgeon-General of the United States Navy has made some interesting statements in his annual report for 1895. When the corps is full it numbers 170 men, but it is very difficult to maintain a full corps. An examining board is constantly in session, but it fails to supply the needed members for two reasons—viz., first, because of the scarcity of applicants; and, secondly, because of the incompetency of those who do apply. Of the nineteen who applied last year but four passed a satisfactory examination, though the examination was not severe. These facts seem to prove that the naval service is more unpopular than other branches of the public service which have a medical corps. It is alleged by those who are familiar with the naval service that the position of the medical corps is humiliating as compared with that of other departments. The naval surgeon enters the service on a lower plane than does the army surgeon. For three years he is confined to the steerage and cannot mess with his profession. He can retire on a pension only after forty years of service, while the army surgeon may retire after thirty years of service. Finally, his rank is inferior to that of other officers and his promotion is correspondingly slow. A Bill is before Congress to improve the efficiency of the naval service, but the provisions in regard to the medical corps do not materially change its status.

Diphtheritic Palsies after the Use of Antitoxin.

The physician to the Hospital for Diphtheria in New York states that from time to time cases of general paralysis have followed diphtheria treated with antitoxin. In the last three months there have been two cases. One, an adult, had general weakness due to partial paralysis in all voluntary muscles so that she could not walk for three months; the other, a child, developed paralysis in some of the muscles of the lower limbs. In a third case paralysis of the muscles of the eye occurred. In a few paralysis of the palate or pharynx develops after the separation of the membrane. He states that more cases of paralysis occur now than formerly, but thinks this is due to the fact that a class of patients recover now who formerly died. He adds that patients who would recover without antitoxin will show less paralysis with antitoxin than without it.

Alien Paupers.

The State of New York has an agency devoted to the arrest of all persons who are paupers and their commitment temporarily in order to determine their proper settlement. When their homes are made out they are immediately sent there, whether in this country or abroad. Since the law went into effect 2632 permanently disabled paupers have been removed to European homes. It is estimated that if these people had been allowed to remain in this country, a charge upon the public, buildings would have to be erected for their shelter equal to the requirements of the poor of a population of 600,000, involving an outlay therefore of at least $500,000, and an ultimate expenditure for their maintenance and care of about $3,948,000. These removals have been openly conducted, and no well-founded complaints have been made by the relatives, guardians, friends, or European communities to which they were sent, and but three of those thus removed have reappeared in this State.

April 18th.

THE CONGRESS OF MEDICINE IN WIESBADEN.

THIS Congress was opened on April 8th, Professor BAÜMLER of Freiburg being in the chair. The members were welcomed by the President of the district on behalf of the Government and by the Mayor of Wiesbaden as the representative of the town.

In his presidential address Professor BAÜMLER said that the Congress held at Munich in April of last year must be regarded as a landmark in the history of these gatherings, inasmuch as the use of diphtheria antitoxin—the most remarkable therapeutical discovery of the age—was there discussed for the first time in detail by the most competent physicians of Germany. It must not be forgotten, however, that efforts to render the human body immune against the influence of morbific agents and to cut short pathological processes were of much earlier date, and, in fact, had their first successful application in the great discovery of Jenner. The present year being the centenary of Jenner's first successful vaccination the Congress was now about to honour the memory of this event so important in the history of medical progress.

The Prophylactic Influence of Vaccination.

Professor VON LEYDEN of Berlin then delivered an address on Vaccination, in which he said that the immense mortality from small-pox was never reduced by any of the measures that were adopted before the time of Jenner, even the most thorough isolation of the sufferers being powerless to prevent the spread of the infection. In the eighteenth century one-tenth of the entire mortality in England was due to small-pox, and in France it caused 300,000 deaths every year, while those who recovered from it were greatly disfigured and often rendered totally blind. Several palliatives were in use, the most noteworthy being the so-called variolation or inoculation of healthy persons with the contents of small-pox pustules. This practice was undoubtedly a step in the right direction, and up to the year 1758 more than 200,000 people were treated in this way, but it was ultimately abandoned altogether, as it was sometimes attended by serious results and inevitably tended to maintain and propagate the disease. Jenner, then, was the first, not only to prove that cow-pox acts as an antitoxin against small-pox, but also that the small-pox virus becomes weakened or strengthened by inoculation on and from different species of animals—a fact which has in our own day been confirmed by Pasteur. Jenner's opinion that a single vaccination would confer life-long protection was not borne out by experience, and it was now known that the operation must be repeated after the lapse of ten years. Modern improvements in the methods of vaccinating and revaccinating, and the exclusive use of animal lymph, which is the rule in Germany, ought to disarm the hostility of the

anti-vaccinationists. Jenner had to struggle against prejudice and opposition, and even now there are people who declare that vaccination is useless and injurious; but we all know that Jenner's work was a blessing to humanity and has been the starting-point of all the modern discoverers, of Pasteur, Koch, and Behring.

Antipyretic Drugs.

Professor KAST (Breslau) said that recent researches had shown that in infectious diseases the danger to the patient was due not so much to the elevation of temperature as to the direct effects of the specific virus. There are even reasons for believing that pyrexia may possibly be a natural remedy provided by nature against the toxines. We now try to destroy the toxines by applying their specific antidote or antitoxin. No antipyretic drugs have any specific action against the toxines except quinine, which is in reality a specific antidote against malaria. Antipyretic drugs, however, have their proper place in therapeutics and cannot be dispensed with on account of their power of mitigating several grave symptoms, especially those which involve the nervous system, such, for instance, as insomnia. In these circumstances Professor Kast considers antipyrin to be the best remedy.

Professor BINZ, speaking as a pharmacologist, discussed some of the most commonly employed antipyretic drugs, such as quinine, antipyrin, salicylic acid, and thallin.

Professor JAKSCH (Prague) agreed with Professor Kast that the principal value of these drugs consisted in their tranquillising influence.

Dr. DETTWEILER (Königstein) recommended their use in phthisis when want of appetite caused by the fever makes the nutrition of the patient difficult.

Rheumatoid Diseases.

Professor GERHARDT (Berlin) directed the attention of the meeting to a group of diseases which are clearly distinct from acute rheumatic fever, but are nevertheless characterised or attended by morbid alterations in the joints, and include scarlet fever, diphtheria, typhoid fever, influenza, syphilis, gonorrhœa, &c. He specially mentioned acute tonsillitis (angina lacunaris), in which there often is an affection of the joints very like acute rheumatic fever. All these complications he proposed to classify as rheumatoid.

APRIL 9TH.

Immunisation against Cholera and Typhoid Fever.

Professor GRUBER (Vienna) described his recent experiments on the production of immunity against cholera and typhoid fever. He has found that the serum of guinea-pigs immunised by the inoculation of living or dead cultures of the bacilli of cholera or typhoid fever is able to immunise other animals. If cultures of bacteria are mixed with this immunised serum these bacteria become altered in a very remarkable way, losing their mobility and collecting in masses. This state is called by Professor Gruber agglutination, and it is produced by cholera or typhoid fever serum not only with the bacteria of these diseases but also with a number of other bacteria. At the normal temperature the serum not only agglutinates the bacteria, but destroys them; if the serum is raised to 60° C. (140° F.) it loses its bactericidal quality and only retains the agglutinating one, but when a drop of fresh serum is added the bactericidal quality at once reappears. According to Professor Gruber immunisation assists the action of the natural bactericidal substances which are contained in the serum (the alexines of Dr. Buchner). He considers that this action is efficient against any kind of bacteria, and he opposes the views of Professor Koch and his school, who maintain that the serum of an immunised animal acts only against one specific kind of bacteria, so that, for instance, cholera serum is effective only against the bacillus of cholera.

In the ensuing discussion Professor PFEIFFER (Berlin), chief of Professor Koch's laboratory, stoutly upheld his opinion that a specific bacterium can only be destroyed by a specific antitoxin. The agglutination described by Professor Gruber is merely a consequence of the degenerating influence of a specific antitoxin on specific bacteria.

Dr. BLACHSTEIN argued that the so-called active and latent virulence of bacteria must be better distinguished. The latter varies according to the nature of the nutrient medium in which the bacteria are growing.

The Heart and the Vaso-motor Apparatus in Infectious Diseases.

Dr. PAESSLER (Leipzig) read a paper on the Action of the Heart and the Vaso-motor Apparatus in Infectious Diseases. He has found, together with Professor Romberg, that the lowering of the blood-pressure in grave cases is due to a paralysis of the vaso-motor nerves consequent on a paralysis of the centre in the medulla oblongata, whilst the cardiac power is not obviously damaged.

Paracentesis of the Spinal Canal.

Professor LENHARTZ (Leipzig) in a communication on Surgical Puncture of the Spinal Canal said that he considered it to be an operation of great diagnostic and therapeutic value. As a means of diagnosis it enables us to make a bacteriological and microscopical examination of the fluid contained in the theca and to ascertain its specific gravity. The operation has never had any unfavourable influence on the patient's health, and has been successfully performed in acute serous meningitis, in chronic tuberculous meningitis, in the so-called epidemic cerebro-spinal meningitis, and in hydrocephalus.

Dr. KRÖNIG, Dr. EWALD, Dr. GOLDSCHEIDER (Berlin), and Professor QUINCKE (Kiel) agreed with Professor Lenhartz that the operation might be of practical utility if cautiously employed. It was described in THE LANCET about a year ago.[1]

Absorption of Ferruginous Compounds.

Professor QUINCKE (Kiel) described his recent experiments on the absorption and excretion of ferruginous compounds by the organism, a question already discussed in detail at last year's meeting of the Congress in Munich.[2] He has been able to prove that in guinea-pigs and rats iron is taken up by the duodenum, jejunum, ileum, and cæcum through the epithelial cells. The absorption of iron is thus very like that of fat.

Dr. SIEGFRIED (Rippoldsau) pointed out that these experiments were a definite proof that iron is an assimilable remedy, a clinical fact long known to all practitioners. He hoped that the contrary views expressed at the last Congress were now finally disposed of. He then referred to the successful treatment of chlorosis by means of ferruginous preparations combined with residence in mountainous localities.

(To be continued.)

Medical News.

CAMBRIDGE UNIVERSITY.—The following candidates have satisfied the examiners in both parts of the examination of Sanitary Science:—

Henry William Beach, Joseph John Guthrie Blandford, George Fletcher Collins, Jonathan Nield Cook, Frederick James Crawford, James Entrican, Alfred Ernest Evans, Charles Arthur Kent, Arthur Martin Mitchell, Frederick William Sell, Arthur John Sharp, Henry Thomson, William Booker Vance, and Charles Louis Williams.

UNIVERSITY OF DURHAM: FACULTY OF MEDICINE.—In the first examination for the degree of M.B. the following candidates have passed in the subjects indicated:—

Chemistry with Chemical Physics, and Botany with Medical Botany.—Alfred Thornhill Greenhill, College of Medicine, Newcastle-upon-Tyne.

Chemistry with Chemical Physics.—John Harris, B.A., Sydney University; Herbert Robert Cambridge Newman, Bristol Medical School; George Norman, M.R.C.S., L.R.C.P., Westminster Hospital; Vaughan Pendred, M.R.C.S., L.R.C.P., Guy's Hospital; George Woodyatt Procter and Robert Alfred Wilson, College of Medicine, Newcastle-upon-Tyne; and Maurice Frederick Squire, M.R.C.S., L.R.C.P., St. Mary's Hospital.

Elementary Anatomy and Physiology.—John Henry Martin and Fred Sutton, College of Medicine, Newcastle-upon-Tyne.

In the first examination for the degree of M.B. under the new regulations the following candidates have passed in the subjects indicated:—

Elementary Anatomy and Biology, Chemistry, and Physics.—Honours: First Class—Richard Henry Dix, College of Medicine, Newcastle-upon-Tyne. Second Class—Ernest Frederick Wharton Bywater, Mason College, Birmingham; and Fred Stuart, College of Medicine, Newcastle-upon-Tyne. Pass List: Ernest Bertram Appleby, Harry Armstrong, Solomon Cross, Maurice Jacobs, and Edward Norman Threlfall, College of Medicine, Newcastle-upon-Tyne.

Elementary Anatomy, Chemistry, and Physics.—Frederick Day Welch, London Hospital.

Anatomy and Biology.—Arthur Hugh Bunting, Hubert Wolstenholme, Horan, John Robert Mitchell, John Ernest Sidgwick, and David

[1] THE LANCET, April 20th, 1895, p. 1022.
[2] THE LANCET, April 25th, 1895, p. 1008.

Henderson Weir, College of Medicine, Newcastle-upon-Tyne; and Margaret Joyce, London School of Medicine for Women.

Chemistry and Physics.—Alan Ayre-Smith and Edward Hovendon Burleigh Barlow, Guy's Hospital; Percy Francis Alderson, Middlesex Hospital; Laurence James Blandford, Clifford Harold Brookes, Sydney John Snow Cooke, Charles Henry Gibson, Arthur Hines, Hugh Robert Kendal, Eliot Swainston, and John Charles Velenski, College of Medicine, Newcastle-upon-Tyne; Arthur Russell Baker and Robert Walker, St. Bartholomew's Hospital; Edleston Harvey Cooke, St. Thomas's Hospital; Selina FitzHerbert Fox and Claudia Anita Prout Rowse, London School of Medicine for Women; Robert James Pearson, Edinburgh School of Medicine; and Thomas Basil Rhodes, Mason College, Birmingham.

Chemistry.—Wm. Henry Isaacs Bathurst, King's College Hospital.

Anatomy.—Harold Robert Dacre Spitta, St. George's Hospital; and Frank Wheler Sime, Guy's Hospital.

In the second examination for the degree of M.B., the following candidates have passed in the subjects indicated:—

Anatomy, Physiology, and Materia Medica.—Honours—Second Class: Maurice Frederick Squire, M.R.C.S., L.R.C.P., St. Mary's Hospital; Herbert Robert Cambridge Newman, Bristol Medical School; Robert Lowis Routledge, College of Medicine, Newcastle-upon-Tyne; Vaughan Pendred, M.R.C.S., L.R.C.P., Guy's Hospital; and James McConnell and Lawrence Fielder Hemmans, College of Medicine, Newcastle-upon-Tyne. Pass List: John Thomson Bell, Thomas Ponsford Cann, Leopold Stanley Davison, Henry Edward Davison, Henry Adamson Fielden, Thomas Harold Gibbs, Douglas Hethcote, Robert Atkinson Morland, Harold Turner Newton, Claud Maxwell Pennefather, Maurice Dale Wood, Allan Mackie Garnock Walker, and Thomas Blandford Watson, College of Medicine, Newcastle-upon-Tyne; Wm. Henry Isaacs Bathurst, and Ernest Castleigh Bailey, King's College Hospital; William James Codrington, M.R.C.S., L.R.C.P., St. Bartholomew's Hospital; Francis Gerrard Hamilton Cooke, and Thomas Stokoe Elliot, Cooke's School of Anatomy; Samual Percy Johnson, Mason College, Birmingham; and George Norman, M.R.C.S., L.R.C.P., Westminster Hospital.

Anatomy only.—Charles Augustus Vogwell, College of Medicine, Newcastle-upon-Tyne.

UNIVERSITY OF EDINBURGH.—The following candidates have passed the examinations indicated below:—

Second Professional Examination for the Degrees of M.B. and C.M. (Old Ordinance).—F. T. H. Adamson, H. L. Apthorp, A. B. Blair, E. L. Borthwick, C. W. Breeks, F. W. Broadbent, D. A. Cameron, M. N. Choudhuri, A. W. G. Clark, D. E. Dickson, J. H. S. B. Douglas, D. L. Fisher, R. M. Gibson, W. H. Goldie, T. P. Greenwood, James Grieve, F. S. Harper, A. G. Hayden, Robert Irvine, A. L. de Jager, Leslie Kingsford, J. S. Lyle, B. A. M'Gregor, J. M. Macgregor, R. F. Mudie, B. N. Mullan, Sarat Mullick, W. D. Osler, D. J. Peirson, G. M'D. Pratt, Oswald Raitt, C. R. Scott, D. C. Sethna, T. B. Schoolbread, E. L. Starmer, J. F. Strickland, J. T. Titterton, W. A. C. Usher, Henry Waters, G. F. Waterston, and M. B. Wright.

Second Professional Examination for the Degrees of M.B. and Ch.B. (New Ordinance).—John Alcindor, A. J. T. Allan, James Allison, A. S. Allum, J. R. Anderson, H. L. S. D. Belasco, William Bell, J. M. Bowie, Stanley Branch (with distinction), C. S. Brebner, R. N. Brebner, H. H. Broome, James Burnet, M.A., John Cameron (with distinction), J. A. Craig, William Craig, Robert Cumming, J. M. Cuthbert, L. J. M. Deas, George Dick, R. J. Dick, W. H. Dickinson, J. E. Dods, F. H. Dommisse, W. S. Eaton, Duncan Forbes, A. D. Fordyce, A. T. Gailleton, Robert Gibson, J. D. Gilfillan, Andrew Gilmour, Alexander Goodall, A. M. Green, W. G. Heath, T. E. Hincks, H. T. Holland (with distinction), C. A. B. Horsford, B. S. Hyslop, W. J. Jones, A. H. Keun, G. E. J. King, G. de Lebat, E. W. Lewis, George Lyon (with distinction), J. C. M'Conaghey, Edward M'Culloch, W. C. M'Donald, John M'Gibbon, J. W. M'Intosh, D. V. M'Intyre, M.A., W. E. M'Kechnie, R. W. M'Kenna, J. W. Mackenzie, T. D. M'Laren, J. W. Mathewson, J. A. Murray, B.Sc., J. H. P. Paton, W. M. Paul, M.A., C. M. Pearson, G. B. Pemberton, A. H. Pirie, Robert Pugh, J. A. Raeburn, H. ◄. Roberts, A. A. Robinson, A. C. Sandstein (with distinction), R. F. M'N. Scott (with distinction), J. A. C. Smith, Ward Smith, G. H. Stewart, Henry Taylor, David Wardrop, W. C. Wilson, and G. J. Young.

Anatomy and Physiology of the Second Professional Examination.—W. M. Barker, Robert Bruce, Robert Crawford, S. F. Cyriax, C. L. Dunn, R. W. T. Ewart, F. B. Feast, J. M. Fraser, H. E. Gibbs, A. A. Gunn, W. E. Hutchison, P. L. M'All, A. C. M'Gilchrist, Robina M'Gregor, G. A. Mackay, William M'Kay, M. B. Marshall, T. R. Matthews, W. P. Meldrum, Faith Philpot-Crowther, J. H. Rhodes, Edgar Somerville, W. E. Tellet, R. le Verley, Henry Wade, and D. C. Wallace.

Third Professional Examination for the Degrees of M.B. and Ch.B.—B. R. Aldren, V. G. Alexander, T. R. W. Armour, E. P. Baumann, Thomas Biggam, R. B. Black, H. F. Boland, William Burns, M.A., R. C. Cunningham, David Clow, C. M. Cooper (with distinction), L. W. Davies, James Donaldson, G. L. Findlay, James Forrest, J. S. Fraser, George Gatenby, Andrew Gibson, William Hamilton (with distinction), Rowland Hill, G. B. Hollings, Patrick Kinmont, A. B. MacCarthy, T. J. T. M'Hattie, J. L. M'Innes, John Malcolm, William Martin, J. D. S. Millu, F. W. More, R. G. Riddel, J. D. Slight, M.A., W. M. A. Smith, W. R. Somerset, J. W. Struthers, G. A. Vincent, W. M. Wilson, and A. G. Worrall.

Robert Sproule has passed the first professional examination in addition to the candidates whose names have already been published.

UNIVERSITY OF ABERDEEN.—WINTER SESSION 1895-96.—University Gold Medals have been gained by the following students:—

Fife Jamieson Memorial Gold Medal in Anatomy, John J. R. Macleod; Keith Gold Medal for Systematic and Clinical Surgery, Robert Bruce, M.A.; Shepherd Memorial Gold Medal for Systematic and Practical Surgery, Henry J. M'Grigor; Matthews Duncan Gold Medal in Obstetrics, C. A. Barclay Laing, M.A.; and Dr. James Anderson Gold Medal in Clinical Medicine, William Hunter.

The following candidates have passed the examinations for the degrees indicated below:—

Degree of B.Sc.—William Shepherd Laverock, M.A., Aberdeen (with highest honours).

Degree of M.D.—William Henry Clark, M.B., C.M., Aberdeen; David Macdonald Davidson, M.B., C.M., Surgeon-Captain, Indian Medical Service; Ashley Watson Mackintosh, M.A., M.B., C.M., London (with highest honours); Cyril James Mansfield, M.B., C.M., Surgeon, R.N., H.M.S. *Anson*; Arthur Henry Rideal, M.B., C.M., Brooks's Bar, Manchester; William Ross, M.B., C.M., Leeds; James Wilson, M.A., M.B., C.M., Wilts County Asylum, Devizes (worthy of commendation); and John Thomson Wilson, M.B., C.M., Inverclyde, Bothwell (under the New Ordinances; worthy of commendation).

Degrees of M.B. and C.M.—Clifford Thiselton Bell, Aberdeen; George Brown, Aberdeen; David Buchan, Aberdeen; William John Byres, M.A., Aberdeen; Robert Fraser Campbell, Wark-on-Tyne, Northumberland; George Chalmers, Huntly; Clarence Isidore Ellis, Mannamead, Plymouth; William Archer Irvine Fortescue, Kingcausie, Maryculter, near Aberdeen; Andrew Thomas Gage, M.A., B.Sc., Aberdeen; John Lyall Grant Gillanders, London; James Leslie Gordon, Old Aberdeen; John A. Alex. Gordon, M.A., Gordonville, Dingwall; Patrick Grant, M.A., Grantown-on-Spey; Thomas Harper, Netherton, Insch, Aberdeenshire; Francis Irvine, Aberdeen; John Grant Jones, Glenlossie, Elgin; Charles Alex. Barclay Laing, M.A., Pitsligo, Fraserburgh; James Alexander Mearns, Kinellar, near Aberdeen; James Adam Milne, M.A., Aberdeen; Hugh Osborne, Kirkcudbright; Alexander Presslie, Aberdeen; Archibald Ramsay, Stonehaven; Andrew Richardson, Aberlour-on-Spey; George Brebner Scott, Peterculter, Aberdeenshire; Henry Sinclair, Ashfield, Cults; James Ramsay Smith, M.A., Ellon; George Stephen, Ellon; George Irvine Thompson Stewart, M.A., Banchory, near Aberdeen; Andrew Thomson, Elgin; Andrew George Anderson Thomson, M.A., Keith (with honourable distinction); Frederick Mayfield Tindall, Fraserburgh; Alexander Watt, Stonehaven; Thomas Duncan Webster, Old Aberdeen; Charles Frederick Weinman, Colombo, Ceylon; and James Strachan Wilson, Aberdeen.

John Geddes Pirie, Buckie, has passed the examinations for the degrees of M.B. and C.M., but will not graduate until he has attained the necessary age.

Degrees of M.B. and Ch.B. (under the New Regulations).—Peter Mackessack, B.Sc., Kinloss, Forres.

The Diploma in Public Health has been conferred on William E. G. Duthie, M.A., M.B., C.M., Woodside, Aberdeen; Alex. Robb, M.A., M.B., C.M., Peterhead (with credit); and Charles L. Swaine, M.D., Indian Medical Service, Madras.

FOREIGN UNIVERSITY INTELLIGENCE.—*Berlin:* Drs. Köppen, Thierfelder, and Nasse have been promoted to Extraordinary Professorships of Psychiatrics, Physiological Chemistry, and Surgery respectively.—Dr. Oestreich has been recognised as *privat-docent* in Pathological Anatomy.—*Marburg:* Dr. A. Barth has been promoted to an Extraordinary Professorship of Surgery.—*Rostock:* Dr. Barfurth of Dorpat has been appointed to the Professorship of Anatomy and to the Directorship of the Anatomical Institute in succession to the late Professor von Brunn.—*Strassburg:* Dr. J. Klein has been recognised as *privat-docent* in Midwifery and Gynæcology.—*Toulouse:* Drs. Pénières, Rémond, Saint-Ange and Broemer, have been appointed to the chairs of External Pathology, Clinical Mental Diseases, Therapeutics, and Materia Medica respectively.

LEEDS GENERAL INFIRMARY.—The new operating department of the Leeds General Infirmary will be erected on the site of the structure which it will supersede, the available area being about 52 ft. by 58 ft., and it will consist of nine rooms, with a general entrance lobby which opens on to the landing of the principal staircase. According to the designs of the architect, Mr. W. H. Thorp of Leeds, these rooms include two operating theatres, each about 20 ft. by 23 ft., communicating with one another through the entrance lobby and also through the instrument room, which measures about 14 ft. by 16 ft. and lies between them, having two doors opening one into each theatre. Two anæsthetic rooms, each about 12 ft. by 16 ft., are arranged one for each theatre, and they lead also each into a separate waiting-room which opens on to the landing of the staircase, so that there are three doorways giving access to the stairs. The remainder of the nine rooms are the recovery-room and the surgeon's room. The division walls will be brick, and the woodwork chiefly teak. The floors of the two theatres and the instrument room will be terrazzo, and the walls will be lined from floor to ceiling with opaline, a substance which has been used in France for this purpose, but not hitherto in England; it is said to be composed of an exclusively mineral enamel in a completely vitrified state, and to be unaffected by acids, frost, or damp. The lining of these three rooms is estimated to cost about £360. They will have roof lights in addition to front and side windows, and the remaining portions of the roof will be concrete. The ventilation will be on the plenum or propulsion system, and the lighting will be by electricity. The entire cost will probably be from £4000 to £5000.

THE treasurer of Guy's Hospital has received a donation of 100 guineas towards the special re-endowment fund from the Liebig's Extract of Meat Company, Limited.

"NATURE" of Thursday next, May 7th, will contain, as an addition to the Science Worthies Series, a Life and an Appreciation of Sir Joseph Lister, P.R.S. The latter will be by Professor Tillmanns of Leipzig. A photogravure portrait of Sir Joseph Lister will accompany the articles as a supplement.

ST. THOMAS'S HOSPITAL MEDICAL SCHOOL.—The William Tite Scholarship has been awarded to Mr. C. F. Selous; the Peacock Scholarship to Mr. J. Gaff; the Musgrove Scholarship, Second Tenure and First College Prize, to Mr. H. E. Hewitt; the Mead Medal for Practical Medicine to Mr. A. W. Sikes; the Cheselden Medal for Surgery and Surgical Anatomy to Mr. J. P. Scatchard; and the Treasurer's Gold Medal to Mr. J. P. Scatchard.

FOOTBALL CASUALTIES.—On the 25th ult., in a Cup-tie match, Kensal St. Mary's against the Old Antonians, a player fractured the fibula of his left leg.—On the same day, in a game on Holbeck Moor, Leeds, a player sustained a fracture of his leg, and was taken to the General Infirmary. A Cumberland player, aged twenty-four years (a forward), while playing for Cumberland at Workington, in the county championship match against Yorkshire, was injured by a blow on the back of the head behind the right ear. He did not feel any immediate effect and continued playing, but subsequently was admitted to the Cumberland Infirmary, where he underwent two operations. He so far recovered as to be able to leave the infirmary, but had a relapse, and died at home, in Carlisle, on Sunday last.

THE LONDON LOCK HOSPITAL AND RESCUE HOME.—The annual report of the London Lock Hospital and Rescue Home for 1895 is of an encouraging character, although the state of the finances does not yet permit the reopening of two wards belonging to the hospital and containing about 40 beds which have now been unoccupied for some years. On Dec. 31st, 1894, there were 41 inmates in the Home, and 66 were admitted during 1895. The matron has no difficulty in obtaining situations for the girls who have passed through the Home. The quality of the work done in the laundry gave general satisfaction, and the amount thereby earned was £1120. There were 709 admissions into the hospital during the year, some of them being very young girls and others being married women. The indebtedness of the charity was £5119 on Dec. 31st, 1893, but this large deficit has now been reduced to £302.

WOLVERHAMPTON AND STAFFORDSHIRE GENERAL HOSPITAL.—The forty-seventh annual meeting of the governors of the Wolverhampton and Staffordshire General Hospital was held at the Bell Medical Library on March 10th. The report stated that the number of in-patients treated during the past year has been 2078 (of these 946 were medical and 1132 were surgical cases), and the number of out-patients has been 14,742. The ordinary income for the past year has amounted to £7544 10*s.* 9*d.*, being an increase of £169 10*s.*, as compared with the previous year. The Hospital Saturday collections have amounted to £3320 17*s.* 5*d.*, being the largest sum collected since the inauguration of the movement twenty-two years ago, but the Hospital Sunday collections have decreased by £63 5*s.* 8*d.* The total expenditure for the year has amounted to £8107 4*s.* 2*d.*, as compared with £8082 5*s.* 11*d.* in the previous year.

THE MEDICAL SOCIETY OF LONDON.—The election of the officers and council for the session commencing October, 1896, will take place on Monday, May 11th. The following are the names of Fellows nominated for office by the council:—President: Reginald Harrison. Vice-Presidents: John C. Thorowgood, M.D., Charles B. Lockwood, Constantine Holman, M.D., and A. Pearce Gould. Treasurer: David H. Goodsall. Librarian: William Henry Allchin, M.D. Honorary Secretaries: George R. Turner and Robert Maguire, M.D. Honorary Secretary for Foreign Correspondence: Alban H. G. Doran. Council: John Anderson, M.D., C.I.E., Howard Barrett, William H. Battle, Frederick L. Benham, M.D., Robert L. Bowles, M.D., J. Mitchell Bruce, M.D., Henry H. Clutton, Sidney Coupland, M.D., Sir James Crichton-Browne, M.D., F.R.S., Sir Dyce Duckworth, M.D., F. de Havilland Hall, M.D., Henry E. Juler, Norman Kerr, M.D., Jonathan F. C. H. Macready, Edward J. Nix, M.D., James W. J. Oswald, M.D., Heinrich Port, M.D., Amand Routh, M.D., Joseph White, and Arthur K. Willis.

MESSRS. DUNCAN, FLOCKHART AND CO. of Edinburgh have opened a branch establishment at 38, Snow-hill, London, E.C.

PRESENTATIONS.—Mr. J. Leslie Callaghan has been presented with a gold watch (suitably inscribed) and an illuminated address as a token of respect and esteem from his patients and friends on his leaving Colyton. He was also presented with a barometer, with a suitable inscription on a silver plate, by the members of the Colyton Social Club in recognition of his services as president.—On April 22nd a handsome black marble timepiece was presented to Dr. H. Rogers-Tillstone by his ambulance and nursing classes, Clevedon, as a mark of their esteem.—Dr. H. J. Mackay of Devizes has been presented by the ladies attending the "First Aid" and "Nursing" classes, which he has recently given in connexion with the St. John Ambulance Association, with a handsome marble clock.—On the 18th ult. Dr. F. W. E. Hutchison, lately assistant to Mr. E. J. Parrott of Hayes, Middlesex, was presented with a gold medal by the inhabitants of that place.—Mr. John S. Forrest, L.R.C.P. Edin., L.F.P.S. Glasg., has been the recipient of a silver hunting flask from the members of the Warkworth Ambulance Classes as a token of appreciation of services rendered to them.

THE DIFFUSION OF SMALL-POX.—The records of the past two weeks serve to indicate that the disease is slowly spreading itself in the provinces. In London it remains quiescent at a low figure, the cases from week to week being now few in number. But attacks are occurring near at hand. At Guildford, after a scare created by the notification of an alleged case of small-pox in a tramp from Gloucester, which turned out to be in reality scarlet fever, a case of the graver disease has been found in the person of a tramp hailing from Westminster. Some stir resulted in the town, nurses were obtained, the case was isolated, and the authorities of Leatherhead were informed, the man having previously passed through that town. The patient died on Saturday last and was buried on the following Monday. Four cases have occurred at High Wycombe, the patients being workers in a paper mill who were brought into contact with rags stated to have come from Gloucester. The town council have been busy in the matter of a temporary hospital near the place, to the great dissatisfaction of the residents around the site of the structure. The guardians have by the casting vote of the chairman determined to enforce the Vaccination Acts, which have been in abeyance for three years, a large number of children having thus escaped vaccination. It is stated that no system of notification is in force in the town. High Wycombe would seem to be far behind the times in the direction of preparation for the stamping out of infectious disease. Much concern is felt lest there should be a widespread epidemic of small-pox there. A case of small-pox was recorded in Malmesbury last week, the victim having the disease mildly, after having been to and fro between Gloucester and Westport several times. The town was shortly after notification of the case placarded with posters urging people to seek vaccination and revaccination. At Gloucester the official returns for the week ended on Thursday, April 23rd, showed that in the week the new cases of small-pox coming to the knowledge of the town council were 168 in number, as against 211 and 201 in the preceding two weeks—a decided fall. These cases brought the grand total during the epidemic to 1470. The cases discharged from hospital in the week in question were 18 in number, the deaths in hospital being also 18, with other 25 deaths registered in the town; and 278 patients were left under treatment in the hospitals. It is satisfactory to have thus to record a decline in the manifestations of the disease, and this especially, seeing that the more insanitary parts of the city are now to some extent being invaded. Still, the disease does not seem to be on this account getting any stronger hold on the place, but rather the reverse. To the end of last week it is computed that 25,000 persons have been vaccinated during the epidemic, and it is stated that a large number of these have been vaccinated by one medical practitioner. During last week the vaccinations and revaccinations carried out at the public charge by the public vaccinators numbered 2231, a falling off from the total of the previous week. The authorities have not slackened their activity, however, in any way, and have had the advantage during last week and part of the present week of conference with Dr. Sweeting, from

the Medical Department of the Local Government Board, that Board having sent him down at the request of the guardians. Much practical good seems to have resulted from his visit, as the problem of how best to secure the vaccination of the great number of residents still to be operated on seems to have been solved. The town council were not slow to assure the guardians that much more needed to be done than they were doing in this direction, and now the city has been mapped out in some dozen districts for house-to-house visitation purposes and vaccinators to a like number have been appointed for the better securing of domiciliary vaccination. Dr. Sweeting, it would seem, held conferences with committees and with the whole body of the guardians, and vaccination officers as well as medical men have been now for the past few days more busy than ever, the responsible duty of supervision being entrusted to Dr. Bond, the medical officer of the neighbouring combined sanitary district of Gloucestershire. We are glad that the guardians have been so fortunate as to obtain the services of such an experienced medical officer of health to superintend the heavy work still to be done. Dr. Sweeting in his last interview with the guardians pointed to the presence of 3000 unvaccinated helpless children in the city still, and it was for the protection of these innocents that extra help must speedily be forthcoming if they were to be saved from becoming victims to the dread scourge which was working such havock among the unprotected young. There seems a marked disposition on the part of the guardians to enforce the Vaccination Acts. The Ambulance Committee of the Metropolitan Asylums Board have complied with the request of the town council of Gloucester that they should allow Dr. Brooke of the Thames Ambulance Service to proceed to Gloucester to take charge of the hospital arrangements. The cost to Gloucester of the epidemic is estimated at some £12,000, and is to be met by a half-yearly rate of 9*d.* in the pound. Dr. Coupland is still carrying on his investigations on behalf of the Royal Commission on Vaccination. It is stated that no recently revaccinated person has contracted small-pox. Seeing that the Commission has so long delayed its report, it is as well that it should be in a position to add the weighty practical evidence of Gloucester to its records. The only danger is lest the rush for vaccination such as has been going on should have led to operations of an inferior class, thus casting discredit on vaccination by reason of only partial protection against small-pox being conferred. This is always a danger to be feared when public stations and other places are flooded by clamouring applicants for a too long delayed prophylactic measure. At Coventry the stations are now daily crowded with persons seeking vaccination for themselves and their children, calf lymph being exclusively used. Many private vaccinations are also being performed. The guardians of Scarborough also have resolved to enforce the Acts. At Neath a family of eight persons has been attacked by small-pox, and two brothers who strenuously refused to be vaccinated have died from small-pox. At Swansea a man has been summoned for concealing a second case of small-pox in his lodging-house, he having stated to daily inquiries that no further attack had followed the initial case. Last Saturday there were 18 cases in the hospital at Swansea, and three additional cases occurred last week, leaving 21 in the institution on Saturday last. Two cases are reported on the Mumbles lighthouse rock. Up to last Saturday there had been 26 cases of small-pox at Exeter, no less than 20 being traceable to a mild attack in a woman, the disease being for some time unrecognisable as small-pox. Of the 26 cases 6 were of unvaccinated persons, and these furnished the only severe attacks, though not one had then proved fatal. All the 4 cases under seven years of age were in unvaccinated children. The child of a travelling tailor has contracted small-pox at Narberth and has been removed to the workhouse together with the parents.

Parliamentary Intelligence.

CURRENT NOTES.

Irish Pauper Lunatics.

THE Poor Relief Bill for Ireland, which the Government hope shortly to be able to introduce, will deal with workhouse administration and in particular with the detention of the insane poor in workhouses.

Horseless Carriages.

The Government has introduced a Bill to meet the difficulty with regard to horseless carriages, autocars, and vehicles of that description. In the present state of the law these carriages can only be used in the streets under the same conditions as heavy locomotives, which, of course, are out of the question when the speed of ordinary horse traction is required. The Bill provides a heavy penalty for negligent driving and has stringent requirements as to the emission of smoke or visible vapour.

Infant Life Protection.

The Select Committee of the House of Lords, appointed to consider the question of the better protection of infant life and the Bill with that object prepared by the London County Council, began work on Friday, April 24th, when they examined Mr. A. Spencer, chief officer of the Public Control Department of the London County Council, and Mr. Luxmore Drew, coroner for West London. They held another meeting on Monday, April 27th, when they examined Mr. Babey, inspector of the London County Council under the Infant Life Protection Act, and Mr. Braxton Hicks, another of the London coroners.

HOUSE OF COMMONS.

THURSDAY, APRIL 23RD.

Miners' Nystagmus.

Mr. John Wilson (Durham) asked the Secretary of State for the Home Department whether it was part of the duties of an inspector of mines to inquire into the action of the safety lamp as a cause of miners' nystagmus; and whether it would be competent for an inspector to prohibit the use of any class of safety lamps if it were proven that such lamp caused nystagmus.—Sir Matthew White Ridley replied: The answer to both parts of the question is in the negative, but I may add that Mr. Snell of Sheffield, who has written a work on miners' nystagmus, and is still carrying on his investigations into its causes, is afforded such assistance as is in his power by the inspector of the district. The conclusions so far obtained point, I understand, to other causes than the use of safety lamps.

Suicides in the Mercantile Marine.

Mr. Akers Douglas, speaking on behalf of the President of the Board of Trade, stated that the attention of the Board had been drawn to the memorandum by the Registrar-General of Shipping and Seamen with reference to the question of suicides in the engine-room staff of the Mercantile Marine, in which it was said the suicides in the foreign-going vessels are prevalent to a degree calling for serious attention. The President of the Board of Trade had called for further information and would give the matter his careful attention.

FRIDAY, APRIL 24TH.

Cycling Accidents in London.

In reply to another question on this subject, Sir M. W. Ridley said: The return which the police have prepared for me shows that the number of serious accidents caused by cyclists during the first quarter of this year was ten, and the number of slight accidents not requiring treatment, or at any rate detention at a hospital, 174. In no case had the accident a fatal result. No special arrangements have been made by the police, but they use to the full the special powers which they possess under the Metropolitan Police Act, Section 54 of that Act providing that every person who shall ride or drive furiously, or so as to endanger the life or limb of any person, or to the common danger of the passengers in any thoroughfare, shall be liable to a penalty, and may be taken into custody without warrant by any constable who sees the offence committed. So far as serious accidents are concerned the figures I have given may be taken as accurate; it is unlikely that any such accidents have occurred without coming to the notice of the police.

MONDAY, APRIL 27TH.

The Spread of Vermin.

Mr. Hazell asked the President of the Local Government Board whether his attention had been called to the fact that a large and growing number of persons, estimated at from 50,000 to 60,000 in London alone, sleeping in refuges and similar places become infested with vermin, and that the same conditions prevail in some of the larger provincial cities; and whether, since this verminous state hinders even deserving persons in their efforts to get employment and spreads the evil among the general population when they go to the parks and to other places of public resort, he could recommend the sanitary authorities and the Poor-law authorities to permit, as far as they found practicable, all verminous persons who might apply to them, to be cleansed by the aid of the apparatus which these authorities already possess, such cleansing to be without charge and without the applicants being in any way treated as paupers.—Mr. Chaplin replied that as regards the casual wards it was the usual practice to provide for the bathing of the inmates and also the cleansing of their clothes where necessary. With regard to those persons who sleep in refuges, it appeared to him that it would not be unreasonable to expect that those who provide the refuges should also provide the means of freeing the clothes from vermin where required. With regard to the general question as to the sanitary authorities and the Poor-law authorities providing means such as those suggested, for cleansing without charge and in the case of persons who were not paupers, at present it appeared to him that there would be considerable difficulty in carrying out such an arrangement. The subject was, however, receiving his consideration.

Foreign Butter.

Mr. Hanbury, in reply to a question by Mr. Flynn, stated that the Customs officers are still continuing to take samples of foreign butter at some of the ports of entry. In January 118 samples were taken, of which ten were found to be adulterated; in February 179, of which sixteen were found to be adulterated; and in March seventy-seven, of which none were found to be adulterated. So far as the Customs were concerned no steps were being taken to fine or otherwise punish

consignees found in possession of adulterated butter, nor had they any legal powers in this particular direction.

TUESDAY, APRIL 28TH.

Coolie Labour in Assam.

Mr. Samuel Smith asked the Secretary of State for India whether he could give the House any information regarding the death-rate of coolies employed in the coal mines of Assam; whether he was aware that the Calcutta Press represented that rate to be very high, and also that a very large percentage were always on the sick list; whether the Indian Government had any information to show that this was caused by a forced change of diet to rice; and, whether the Government could make regulations enforcing the supply to immigrants of the same kind of food they had been previously accustomed to, in the same way as was done for Native soldiers in the Indian Army?—Lord George Hamilton replied that the industry to which the question referred was, comparatively speaking, a very small one, employing little more than a thousand coolies. He had no information as to the death-rate prevailing among them, but he had seen a letter on the subject from a visitor to Assam, published in the Calcutta newspapers, in which it was stated that the death- and sick-rates were high, but no figures were given. The suggestion that evil effects were produced by forced change to rice diet seemed improbable, inasmuch as most of these coolies were drawn from rice-consuming districts. As at present advised he saw no occasion for the issue of regulations on this subject, and he might add that the writer of the letter mentioned bore testimony to the excellence of the existing arrangements for feeding and housing the coolies and for providing them with medical care.

The Horse Leech Question.

Mr. Fell Pease asked the President of the Board of Agriculture if he was aware that a large number of old horses were exported to France, where they were subjected to very cruel treatment by being turned out into marshy land, where they were fastened upon by leeches and thus tortured to death; and if he could prevent the export of old and useless horses likely to become victims of this treatment.—Mr. Walter Long replied that he had seen various statements in the newspapers on this subject, but he had not himself received any representations respecting it. He understood, however, that full inquiries had been made on the spot by the Royal Society for the Prevention of Cruelty to Animals, and that the conclusion arrived at was that the original statement was happily a gross exaggeration. In any case, it would not be competent for him to prohibit the export of horses from this country.

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

ANDERSON, G. B., M.B., C.M. Edin., has been appointed Parochial Medical Officer by the Cannonbie Parish Council.

BEAUMONT, J. C. H., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Infirmary and the Gordon-road Workhouse of the parish of Camberwell, vice Chabot, resigned.

BURT, D. J. S., M.B., C.M. Edin., has been appointed House Surgeon to the Brighton, Hove, and Sussex Throat and Ear Hospital, Brighton.

CLARK, R. I., M.B., C.M. Edin., has been appointed Medical Officer for the Maryport Sanitary District of the Cockermouth Union, vice J. Little, resigned.

CRAGO, W. H., L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Assistant Surgeon to the Sydney Hospital, New South Wales.

DALE, FREDERIC, M.D. Cantab., F.R.C.S. Eng., has been appointed Honorary Ophthalmic and Aural Surgeon to the Scarborough Hospital and Dispensary.

DAVIS, S. B., M.B., C.M. Edin., has been appointed Resident Medical Officer and Public Vaccinator for the York District, Western Australia.

FLYNN, R. A., F.R.C.P. Irel., L.R.C.S. Irel., has been appointed Gynæcologist to the Drumcondra Hospital.

FLUX, GEORGE B., M.D. Brux., L.R.C.P., M.R.C.S., L.S.A., has been appointed Anæsthetist to the National Dental Hospital.

FORTESCUE, W. A. J., M.B., C.M. Aberd., has been appointed Medical Officer, Royal Infirmary, Aberdeen.

GARSTANG, T. W. H., M.R.C.S., has been appointed Medical Officer of Health by the Middlewich Urban District Council.

GILL, SAMUEL E., M.B. Lond., L.R.C.P., M.R.C.S., has been appointed Resident Medical Officer to the Royal Hospital for Diseases of the Chest, City-road.

GORDON, J. L., M.B., C.M. Aberd., has been appointed Medical Officer, Royal Infirmary, Aberdeen.

GRAHAM, JAS., M.B., C.M. Edin., has been appointed Medical Officer for the Orton Sanitary District of the East Ward Union, vice J. S. Aitken, resigned.

HARVEY, H. F., M.R.C.S. Eng., has been appointed, pro tem., Principal Medical Officer in Western Australia.

HEPBURN, W. A., M.D. St. And., F.F.P.S. Glasg., has been reappointed Medical Officer of Health by the Durham Rural District Council.

JENKINS, GEO. J., M.B., C.M. Edin., has been appointed Resident Medical Officer of the Craiglockhart Poorhouse.

JEPSON, E., M.D. Durh., M.R.C.S., has been reappointed Medical Officer of Health by the Durham Rural District Council.

JONES, HENRY T., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Second Sanitary District of the Pembroke Union, vice J. W. Morison, resigned.

JONES, SAM. E., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer for the Shocklack Sanitary District of the Tarvin Union.

LANSDOWN, C. E., L.R.C.P. Lond., M.R.C.S., has been appointed Resident Medical Officer, York Dispensary.

LITTLEWOOD, J. O., L.R.C.P. Lond., M.R.C.S., has been reappointed Medical Officer of Health by the Skegby Rural District Council.

LOVEGROVE, J. F., M.R.C.S. Eng., has been appointed Government Medical Officer and Vaccinator for the district of Picton, New South Wales.

MUNRO, J. D. R., M.D. Edin., has been appointed Medical Officer of Health to the Nantwich Urban District.

O'MEEHAN, J. A., L.R.C.S. Irel., has been appointed Resident Medical Officer and Public Vaccinator for the districts of Kalgoorlie, East Coolgardie, Western Australia.

PEARSON, R. S., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health for the Wigan Rural Sanitary District, vice J. A. Marsden, resigned.

PURSER, CECIL, M.B., Ch.M. Syd., has been appointed Honorary Assistant Physician to the Prince Alfred Hospital, Sydney, New South Wales.

REED, H. A., L.R.C.P. Lond., M.R.C.S. Eng., has been appointed Public Vaccinator for the district of Ellesmere, New Zealand.

SANDFORD, E. J., M.D. St. And., M.R.C.S., has been reappointed Medical Officer of Health for the Drayton Rural Sanitary District.

SCATTERTY, WM., M.D., C.M. Aberd., has been appointed Medical Officer of Health for the Keighley Urban Sanitary District.

STEWART, C. A., L.R.C.P., L.R.C.S. Edin., has been appointed Acting Officer of Health for Richmond City, Victoria, Australia.

STEWART, G. J. T., M.B., C.M. Aberd., has been appointed Medical Officer, Royal Infirmary, Aberdeen.

SYMONS, WILLIAM HENRY, D.P.H. Oxon. and Durham, and M.I.C., has been appointed Medical Officer of Health by the Bath Urban Sanitary Authority.

THOMSON, A. G. A., M.B., C.M. Aberd., has been appointed Medical Officer, Royal Infirmary, Aberdeen.

TIPPER, ERNEST H., M.R.C.S. Eng., L.R.C.P. Lond., L.S.A. Lond., has been appointed Court Physician to the Independent Order of Foresters, Denmark-hill.

USHER, C. H., M.B., B.C. Camb., F.R.C.S. Edin., has been reappointed Ophthalmic Surgeon, Royal Infirmary, Aberdeen.

WALSHAM, HUGH, M.A., M.B. Cantab., M.R.C.P. Lond., has been appointed Assistant Physician to the City of London Hospital for Diseases of the Chest, Victoria Park.

WAYLEN, A. R., M.D. St. And., M.R.C.S. Eng., has been appointed Chairman of the Aborigines Protection Board, Western Australia.

WHICHER, A. H., M.R.C.S., has been reappointed Medical Officer of Health by the Midsomer Norton Urban District Council.

WIGHTMAN, J. P., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of Health by the Rawdon District Council.

WILLIAMSON, W. W., M.B., C.M. Edin., L.R.C.P., L.R.C.S. Edin., L.F.P.S. Glasg., has been appointed Medical Officer of Health for the Lymm Urban Sanitary District, vice Fox, deceased.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BULAWAYO HOSPITAL.—Resident House Surgeon, unmarried. Salary £400 per annum, with free board and lodging. Applications to the Chairman, Hospital Board, Bulawayo, Rhodesia.

BURGH OF LEITH PUBLIC HEALTH HOSPITAL.—Resident Physician for one year. Salary 50 guineas. Applications to the Town Clerk, Town Clerk's Office, Leith.

DENTAL HOSPITAL OF LONDON AND LONDON SCHOOL OF DENTAL SURGERY, Leicester-square, W.C.—Demonstrator. The honorarium is £50 per annum.

GENERAL HOSPITAL, Barbados, West Indies.—Junior Resident Surgeon for three years. Salary £200 per annum, payable monthly, with unfurnished apartments. Applications to the Secretary, Barbados General Hospital.

GLAMORGAN COUNTY ASYLUM, Bridgend.—Junior Assistant Medical Officer. Salary £130, rising £10 a year to £150 if approved, with board (no beer or wine), lodging, and washing.

HOSPITAL FOR WOMEN, Soho-Square, London, W.—House Surgeon for six months. Salary £30 for that period.

KENT COUNTY OPHTHALMIC HOSPITAL, Trinity House, Maidstone.—House Surgeon. Salary, with furnished apartments and attendance in the hospital, but without board, for the first year £125 and £150 after the first year.

METROPOLITAN ASYLUMS BOARD—SOUTH-EASTERN HOSPITAL, Hatfield-street, Old Kent-road, S.E.—Medical Superintendent. Salary at the rate of £300 per annum, rising by annual increments of £25 to £500 per annum, with a partially furnished house, attendance, coals, gas, and washing. Applications to the Clerk to the Board, Norfolk-street, Strand, W.C.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—Surgeon and Assistant Surgeon.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART AND PARALYSIS, Soho-square, London,—Resident Medical Officer for six months. Board, residence, laundry, and an honorarium of 10 guineas for that period.

PLYMOUTH ROYAL EYE INFIRMARY.—Honorary Surgeon.

RANGOON MUNICIPALITY.—Health Officer. Salary Rs. 600 per mensem, rising to Rs.1000 per mensem by annual increments of Rs. 50 per mensem. Applications to Messrs. Ogilvy, Gillanders, and Co., Sun-court, 67, Cornhill, London, E.C.

ROYAL SOUTH HANTS INFIRMARY, Southampton.—Assistant House Surgeon for six months. Gratuity of £10 will be given if found satisfactory.

SHEFFIELD ROYAL HOSPITAL.—House Physician, unmarried, for one year. Board (exclusive of wine and beer) and lodging provided, and an honorarium of 25 guineas.

STAMFORD, RUTLAND, AND GENERAL INFIRMARY, Stamford.—House Surgeon, unmarried, for two years. Salary £100 per annum, with board, lodging, and washing.

STOCKPORT INFIRMARY.—Junior Assistant House Surgeon for six months. Board and residence provided, and an honorarium of £10 given after six months' satisfactory service.

STRETTON HOUSE PRIVATE ASYLUM.—Resident Medical Officer, unmarried. Applications to Mr. Campbell Hyslop, Stretton House, Church Stretton, Salop.

UNIVERSITY OF ST. ANDREWS.—Lecturers: (1) on Anatomy, salary £300 per annum; (2) on Materia Medica, salary £200 per annum; and (3) on History, salary £200 per annum. The appointments for a term of three years. Application to the Secretary of the University Court, St. Andrews.

VICTORIA HOSPITAL FOR SICK CHILDREN, Queen's-road, Chelsea, S.W.—Assistant Physician to the Out-patients for five years. Also House Physician to the In-patients for twelve months. Honorarium £50, and board and lodging in the hospital provided.

Births, Marriages, and Deaths.

BIRTHS.

BERRY.—On April 28th, at Wansford House, Watford, the wife of F. Haycraft Berry, M.D. Lond., of a son.

BONTOR.—On April 23rd, at Great Berkhamsted, Herts, the wife of Sidney A. Bontor, M.D., of a son.

CORNER.—On April 26th, at Earlswood Asylum, Redhill, Surrey, the wife of Harry Corner, M.D. Lond., of a son.

HARRISON-GILPIN.—On April 12th, at Bengeworth, Evesham, the wife of R. Harrison-Gilpin, M.R.C.S., L.R.C.P. Lond., L.S.A., M.O.H., of a son.

LONGTON.—On April 24th, at Eaton-road, Hove, the wife of G. Harold Longton, M.R.C.S., L.R.C.P. Eng., of a son.

MARTIN.—On April 23rd, at Arnheim, Blackburn, the wife of John M. H. Martin, M.D. Victoria, F.R.C.S., J.P., of a son.

SANDILAND.—On April 25th, at 137, Southgate-road, N., the wife of A. H. Sandiland, L.R.C.P. Lond., of a son (stillborn).

SAUNDBY.—On April 26th, at Edmund-street, Birmingham, the wife of Robert Saundby, M.D. Edin., of a son.

SOLLY.—On April 24th, at Strathlea, Harrogate, the wife of Ernest Solly, M.B., F.R.C.S., of a daughter.

MARRIAGES.

BÖDEKER—WARDLAW.—On April 28th, at the Parish Church of St. Mary, Stratford-le-Bow, by the Rev. Marmaduke Hare, Vicar, Henry Albert Bödeker, M.B. & C.M., of Moulmein, British Burmah, to Helen, youngest daughter of Sir Henry Wardlaw, Bart, of Pitrearlie, Balmule, Tillicoultry, Scotland. No cards.

DAVID—WILLIAMS.—On April 28th, at Llanwonno Parish Church, by the Rev. Llewellyn Lloyd Davies, M.A., W. Washington David, M.R.C.S. Tonypandy, to Anne Williams, daughter of the late Thomas Williams, Y Glog, Llanwonno.

HAIG—WHITTON.—On April 21st, at St. Cuthbert's, Philbeach-gardens, Surgeon-Lieutenant-Colonel Percy de Haga Haig, I.M.S., 1st Punjab Cavalry, to Eleanor Beatrice (Norah), eldest daughter of Brigade-Surgeon G. E. Whitton, of Kensington-mansions, S.W.

LAPTHORN—LEE.—On April 23th, at Union Chapel, Islington, Charles Albert Lapthorn, F.R.C.S.E., of Bletsoe House, Littlehampton, to Agnes Mary, daughter of Henry Lee, J.P., of Earlham, Highbury-quadrant, N.

OVEREND—PAYNE.—On April 22nd, at All Saints', Edmonton, Wilkinson Overend, M.B., B.A. Oxon., of Sheffield, to Elizabeth Russell, eldest daughter of Wm. Francis Willton Payne, of Bringhurst, Bush-hill-park, Enfield.

QUARRY—WARREN.—On April 22nd, at St. Mary's, Winchfield, Hants, Marcus Henry Quarry, M.B., B.Ch. Irel., Medical Superintendent of Lambeth Infirmary, to Ella Mary, eldest daughter of the late L. L. Warren.

STUART—MARKS.—On April 24th, at St. Mary's, Barnes, Alexander Stuart, M.B., C.M. Edin., of Aberdeen, to Agnes Drysdale, daughter of H. Stacy Marks, R.A.

SUTHERLAND—BARWELL.—On April 30th, at St. John's, Hollington, St. Leonard's, by the Rev. W. H. Green, M.A., Vicar, and the Rev. E. N. Powell, M.A., Henry Sutherland, M.D., of Richmond-terrace, Whitehall, to Meta Prescott, second daughter of Captain William Blunt Barwell, formerly 16th Bengal Lancers, and granddaughter of the late General William Prescott.

DEATHS.

ANDERSON.—On April 26th, at Sunnybrae, Pitlochry, N.B., Arthur Anderson, M.D., C.B., retired Inspector-General of H.M. Hospitals, in his 82nd year.

CLARK.—On April 23rd, at Gatestone-road, Norwood, Willington Clark, F.R.C.S., L.S.A., in his 52nd year.

CRAIG.—On April 15th, at Waverley House, Worthing, John Craig, F.R.C.S., late of the East India Company's Service.

HARE.—On April 18th, at Sunnylea, Weymouth, suddenly, Richard William Hare, Surgeon-Lieutenant-Colonel, M.S., aged 57.

HIGHETT.—On April 20th, Charles Highett, M.R.C.P. Edin., of Field House, Montpellier, Bristol.

LOCKHART.—On April 29th, at Granville-park, Blackheath, William Lockhart, F.R.C.S., for twenty-five years Medical Missionary in China (London Missionary Society), aged 84.

MAHONY.—On April 25th, at East Grinstead, Arthur John Mahony, L.S.A., aged 76.

SQUARE.—On April 18th, at 14, Portland-square, Plymouth, William Square, F.R.C.S., of pneumonia, aged 51.

N.B.—A fee of 5s. is charged for the insertion of Notices of Births, Marriages, and Deaths.

Medical Diary for the ensuing Week.

OPERATIONS.

METROPOLITAN HOSPITALS.

MONDAY (4th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), St. George's (2 P.M., Ophthalmic 1.15 P.M.), St. Mary's (2.30 P.M.), Middlesex (1.30 P.M.), St. Mark's (2 P.M.), Chelsea (2 P.M.), Samaritan (Gynæcological, by Physicians, 2 P.M.), Soho-square (2 P.M.), Royal Orthopædic (2 P.M.), City Orthopædic (4 P.M.), Gt. Northern Central (2.30 P.M.).

TUESDAY (5th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), Guy's (1.30 P.M.), St. Thomas's (3.30 P.M.), Middlesex (1.30 P.M.), Westminster (2 P.M.), West London (2.30 P.M.), University College (2 P.M.), St. George's (1 P.M.), St. Mary's (2 P.M.), St. Mark's (2.30 P.M.), Cancer (2 P.M.).

WEDNESDAY (6th).—St. Bartholomew's (1.30 P.M.), University College (2 P.M.), Royal Free (2 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St Thomas's (2 P.M.), London (2 P.M.), King's College (2 P.M.), St. Mary's (2 P.M.), National Orthopædic (10 A.M.), St. Peter's (2 P.M.), Samaritan (2.30 P.M.), Gt. Ormond-street (9.30 A.M.), Gt. Northern Central (2.30 P.M.).

THURSDAY (7th).—St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), University College (2 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), London (2 P.M.), King's College (2 P.M.), Middlesex (1.30 P.M.), St. Mary's (2.30 P.M.), Soho-square (2 P.M.), North-West London (2 P.M.), Chelsea (2 P.M.), Great Northern Central (Gynæcological, 2.30 P.M.).

FRIDAY (8th).—London (2 P.M.), St. Bartholomew's (1.30 P.M.), St. Thomas's (3.30 P.M.), Guy's (1.30 P.M.), Middlesex (1.30 P.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), King's College (2 P.M.), St. Mary's (2 P.M., Ophthalmic 10 A.M.), Cancer (2 P.M.), Chelsea (2 P.M.) Gt. Northern Central (2.30 P.M.).

SATURDAY (9th).—Royal Free (9 A.M. and 2 P.M.), Middlesex (1.30 P.M.), St. Thomas's (2 P.M.), London (2 P.M.), University College (9.15 A.M.), Charing-cross (3 P.M.), St. George's (1 P.M.), St. Mary's (10 P.M.), Cancer (2 P.M.).

At the Royal Eye Hospital (2 P.M.), the Royal London Ophthalmic (10 A.M.), the Royal Westminster Ophthalmic (1.30 P.M.), and the Central London Ophthalmic Hospitals operations are performed daily.

SOCIETIES.

MONDAY (4th).—ODONTOLOGICAL SOCIETY OF GREAT BRITAIN (40, Leicester-square, W.C.).—8 P.M. Mr. J. F. Colyer will open a Discussion on The Early Treatment of Crowded Mouths. Mr. G. Brunton: Some Experiments in Colouring Porcelain for Teeth and Gum Body.

SOCIETY OF ARTS.—8 P.M. Mr. J. Swinburne: Applied Electro-Chemistry. (Cantor Lecture.)

TUESDAY (5th).—PATHOLOGICAL SOCIETY OF LONDON.—Papers:—Dr. N. Moore and Dr. Kanthack: Malarial Hæmatozoon in Ashanti Fever.—Mr. J. Smith: Lymph Scrotum with Filaria.—Dr. Arkle and Dr. Hinds (Worthing): Pneumonomycosis.—Mr. Shattock: Healing of Incisions in Vegetable Tissues. Card Specimens: Mr S. Jones: Bony Tumours of Scalp.—Mr. J. R. Lunn: Aneurysm of Inferior Thyroid Artery.—Dr. H. C. Sharp (Truro): Primary Colloid Carcinoma of Bladder.—Mr. St. C. Thomson: Angeioma of Septum Nasi.—Mr. Targett: (1) Psammoma of Dura Mater; (2) Colloid Duct Cancer and Sarcoma in the same Breast.—Dr. Rolleston: (1) Myeloid Cells in Mammary Sarcoma; (2) Embolism of Coronary Artery; (3) Loose Body Encysted on Convex Surface of Liver.

SOCIETY OF ARTS.—8 P.M. Mr. J. F. Dowling: Australia's Prospects in British Markets.

WEDNESDAY (6th).—OBSTETRICAL SOCIETY OF LONDON.—8 P.M. Specimens will be shown by Dr. Lewers, Mr. Doran, Dr. Handfield-Jones and others. Adjourned Discussion on Mr. Morison's, Dr. Spencer's and Dr. Eden's papers on Deciduoma Malignum. Papers:—Mr. A. Doran: Cases of Fibroma of the Ovary and Ovarian Ligament Removed by Operation; with a series of After-Histories of Cases reported in the Transactions since 1879.—Dr. J. Phillips: Anterior Colpotomy.

SOCIETY OF ARTS.—8 P.M. Mr. H. Maxim: High Explosives and Smokeless Powders.

THURSDAY (7th).—OPHTHALMOLOGICAL SOCIETY OF THE UNITED KINGDOM (11, Chandos-st., Cavendish-sq., W.)—8 P.M. Clinical Evening. Mr. A. Critchett: (1) Restoration to Normal Vision after Sympathetic Ophthalmitis; (2) Extraction of a Dislocated Lens with good result.—Dr. R. D. Batten: Optic Nerve Disease in a Mother and Three Children.—Mr. H. Spicer: Case of Spurious Optic Neuritis.—Mr. H. Power: Case of Lightning Stroke of Face without Permanent Lesion of the Eyes.—Dr. D. Mowat: Lymphangiectasis of Eyelids.—Mr. Maclehose: One-sided Sixth Nerve Paralysis, Retraction of Globe and Contraction of Orbicularis on Rotation Inwards.—Mr. B. Taylor: Transplantation of Skin to the Surface of the Eyeball for the Cure of Symblepharon.—Mr. Cartwright: Posterior Lental Opacity, remains of Hyaloid Artery and Coloboma Lentis.—Mr. F. Eve: Case of Detachment of Retina treated by Drainage.

HARVEIAN SOCIETY (Stafford Rooms, Titchborne-street, Edgware-road, W.).—8.30 P.M. Dr. A. T. Schofield: Mental Therapeutics.

FRIDAY (8th).—CLINICAL SOCIETY OF LONDON.—8.30 P.M. Mr. L. Hudson: A Case of Malingering in a Boy aged Eleven.—Mr. E. Ward: Three Cases of Laryngectomy.—Mr. W. A. Lane: A Case Illustrating a condition of Partial Congenital Dislocation of both Hip Joints Forward and Upwards.—Mr. Raymond Johnson; Fracture of the Neck of the Femur in a Young Subject resulting from Dry Caries of the Bone.—Mr. Makins: A Case of Division and Immediate Suture of the Left Vagus.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

MONDAY (4th).—ROYAL INSTITUTION.—5 P.M. General Monthly Meeting.

TUESDAY (5th).—ROYAL INSTITUTION.—3 P.M. Mr. C. V. Boys: Ripples in Air and on Water.

WEDNESDAY (6th).—NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Bloomsbury).—3 P.M. Lecture by Dr. Gowers.

HOSPITAL FOR CONSUMPTION, &c. (Brompton).—4 P.M. Dr. C. T. Williams: The Arrest of Pulmonary Tuberculosis.

THURSDAY (7th).—ROYAL INSTITUTION.—3 P.M. Mr. W. Gowland: The Art of Working Metals in Japan.

FRIDAY (8th).—CENTRAL LONDON THROAT, NOSE, AND EAR HOSPITAL.—4 P.M. Mr. W. Wingrave: Of Malignant Disease of the Throat and Larynx.

ROYAL INSTITUTION.—9 P.M. Prof. S. P. Thompson: Electric Shadows and Luminescence.

SATURDAY (9th).—ROYAL INSTITUTION.—3 P.M. Mr. F. Corder: Three Emotional Composers—Berlioz.

Notes, Short Comments, and Answers to Correspondents.

EDITORIAL NOTICE.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side of the paper only.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET *should be addressed "To the Manager."*

We cannot undertake to return MSS. not used.

AN INSURANCE COMPANY AND A MEDICAL REFEREE.

WE have received from Dr. Sidney A. Bontor of Great Berkhamsted the copy of an interesting correspondence which has taken place between himself and a sickness and accident insurance company. Dr. Bontor was requested by the company to examine a case and the offer was made of a fee of 5*s*. As the examination was a full one he properly pointed out that the fee was insufficient. He then received an offer of 7*s*. 6*d*., and the person insuring having called upon him by appointment was examined to avoid the inconvenience of sending him away. But Dr. Bontor, in forwarding the report, pointed out that the fee was inadequate, and that as he happened to hold a policy with the company he felt compelled to withdraw from it if such fees were tendered to medical examiners. The manager then sent him a fee of 10*s*. 6*d*. and said that he could not see why Dr. Bontor proposed to withdraw his policy, as the fees offered were all the company could afford. Dr. Bontor replied that he was withdrawing because he did not care to support an office which "sweated" his own profession, and pointed out that the medical examiners should be paid for the work they did irrespectively of the amount of the premium. To this the office replied that the company could not afford to pay more and that the fees had to be adjusted to what they could pay and not what they ought to pay. Dr. Bontor now asks us our opinion on the transaction. We think there can be but one opinion on the matter: if the office cannot afford to pay they must "shut up shop." The contention that the office should pay what they can and not what they ought to pay is monstrous.

F. E. S.—We appreciate our correspondent's reasons, but he must not attempt to practise save as an assistant and under the immediate supervision of a qualified man.

Mr. Lawrence Hamilton is thanked for his communication. We have not seen the book in question.

"A FEMALE MEMBER OF THE ARMY MEDICAL STAFF."

To the Editors of THE LANCET.

SIRS,—Referring to the correspondence on this subject which was carried on in THE LANCET for so many weeks in October and November last, may I be allowed to supplement it by further disclosures? Before entering on the general question I beg to state that I have recently discovered Dr. Barry's grave in Kensal Green, and found it in a shamefully dilapidated condition considering the eminence and remarkable history of the deceased. In fact, I feel bound to appeal to the Army Medical Department in particular, and to the medical profession in general, to rescue from oblivion this last memorial of so estimable, however eccentric, a member of its guild—a class of men second to none in nobility of purpose, practical sympathy, and largeness of ideas. The courteous custodian of the cemetery had never even heard of Dr. Barry, much less her antecedents, and only knew the exact locality of her resting place by reference to the annual register of 1865, kept at the gate house, wherein are recorded the following particulars: "Dr. James Barry; number of grave 19,301; square 67; row 6." We proceeded to the spot and found the rough sandstone slab lying on the grass, smashed at its base when it fell or was blown down years ago, utterly ignored and forgotten! The inscription on the tablet is decipherable with some difficulty, as follows:—

DR. JAMES BARRY,
INSPECTOR-GENERAL OF ARMY HOSPITALS.
DIED 15 JULY, 1865. AGED 71 YEARS.

Truly has this distinguished medical officer of the female sex been allowed to die and sleep in "this neglected spot," forgotten by relations, overlooked by friends, undistinguished by the community. It is hard, nay, disgraceful! But it is not too late to mend matters by the erection of a suitable Scotch granite monument, subscribed for by the medical men of the empire, whereon should be recorded in brief the history of Dr. James Barry's unique career and her services to humanity.

To-day I had an interview with the Director-General, A.M.D., and I have seen the official record of Dr. Barry's services, in which she is stated to have been "mentioned in dispatches," "strongly recommended for promotion," "published in General Orders for assiduity and skill during an epidemic in the West Indies," &c. Sir Wm. Mackinnon seemed greatly pleased with the revived interest evinced by the medical profession in Dr. Barry's extraordinary career, and added, "You are aware, I suppose, that Barry was the daughter of a Scotch baronet, Buchan by name, who married one of the Somerset family, and hence the Doctor's great influence at head-quarters through Fitzroy-Somerset, Lord Raglan. She visited his lordship in the Crimea, but was not out there on active service. This may account for her never receiving a distinction. You know she was a strict vegetarian and only drank Cape wine. She served at the Cape during the government of Lord Charles Somerset, and fought a duel with his aide-de camp. Some years ago I met Sir Josias Cleotè (the aide-de-camp in question) at a public dinner, and he told me the circumstances of the duel in these very words: 'I am the only officer in the British army who has ever fought a duel with a woman. When I was aide-de-camp to Lord Charles Somerset at the Cape a buxom lady called to see him on business of a private nature, and of course they were closeted for some time. Dr. Barry made some disparaging remark about this. "Oh, I say, Cleotè," he sneered, "that's a nice Dutch filly the governor has got hold of." "Retract your vile expression, you infernal little cad," said I, advancing and pulling his long ugly nose. Barry immediately challenged me and we fought with pistols, fortunately without effect.'" It will here be remembered what I stated in my first letter to THE LANCET on this subject, that I met Dr. Barry in 1858, and voyaged in the same cabin with her to Barbadoes, whither she was going on a visit to her old enemy and present friend, General Sir Josias Cleotè, commanding troops in that island. Sir Wm. Mackinnon proceeded to tell me that Dr. Barry was brought up in Malta, and always seemed to prefer tropical or semi-tropical stations; she served in the Mediterranean and West Indies most of her time. "She had a lovely grey Arab in Corfu," he went on, "which, I remember, she gave to one of the Somersets. After all there was no mistaking her build as a woman—broad hips, small feet, for instance—and perhaps you are aware that she left strict injunctions for her corpse to be sewn up in a blanket before being placed in a coffin." Sir William had my novel, "A Modern Sphinx," on his table, and no doubt when he reads it some of the letters from THE LANCET quoted in the Introduction may awaken on his part other and still more interesting reminiscences of this famous female.

I am, Sirs, yours truly,

Savage Club, April 28th, 1896. E. ROGERS, Lieutenant-Colonel.

P.S.—You are aware that my novel, "A Modern Sphinx" (Dr. James Barry or Fitzjames), originally published in 1881 at 31*s*. 6*d*., has been republished in one volume, with seven illustrations, at 7*s*. 6*d*. There are only 100 copies now extant and then the book will be out of print, application for which should be addressed to me, either at the depôt, 20, Buckingham-street, Strand, or here.

MEDICAL CURRICULUM IN NEW YORK.

THE *Maryland Medical Journal* says that Governor Morton of New York has signed the new medical Bill which raises the medical student's course from three to four years, and allows students who enter colleges to graduate under the rules in force when they matriculated. This law applies to all medical colleges in the State.

Surgeon has not enclosed his card.

"GOOD v. BAD VACCINATION."

To the Editors of THE LANCET.

SIRS,—"One who Knows" in THE LANCET of April 25th has hurled his anathema at the heads of all who do not hold his views of certification of vaccination. He insists that four insertions by an operator, who is be furthermore requires to be an expert giving up his time to the duty of making a rigid examination of the person vaccinated, is to be the touchstone whereby his fellow practitioners are to be judged. Those who do not come up to his self-constituted standard he prejudges as having a leaning towards anti-vaccination—i.e., as looking askance at vaccination as a prophylactic—and craven-hearted curs who have not the moral courage to oppose the letter of that law the spirit of which he accuses them of breaking.

Fully sensible that criticism when extended to the remarks of "One who Knows" may appear akin to presumption, while opinions diametrically opposed to the conclusions of "One who Knows" must *a fortiori* be prejudged ignorance yet there are arguments, however specious and sophisticated they may appear when coming from the opposite side, which furnish support to and grounds for such opposition. He will allow, for he cannot controvert the same, that the intensity of action of specific febrile diseases, among which we reckon cowpox or vaccination, and the subsequent immunity they confer, does not vary directly as the numerical coefficient which represents the number of seats of primary inoculation. A man is not the less syphilised because he has one primary chancre than he would be if he had had four such. So with the other specific febrile diseases, the number of seats of inoculation bears no tangible proportion to the intensity of the disease. One or two perfect vesicles, I hold, are as much likely to prove a prophylactic against small-pox as four or six such. I anticipate one objection that "One who Knows" may raise as a telling argument in favour of four insertions: it is that statistics drawn from the returns of the small-pox hospitals do not bear me out, as more admissions are made of persons with one or two scars than of individuals showing four such marks; and that the type of disease is milder among four-scarred individuals than those of the two-scar class. But if statistics are worth anything they must be proportionately considered. Now for every one individual in the population of a district who possesses four scars of vaccination there are at least ten who do not possess more than one or two such marks. Make your comparison a proportionate one and you will see that no greater immunity is gained by four seats of inoculation than by two. "One who Knows" considers it a matter of national importance to see all vaccination relegated to properly appointed public vaccinators, who should be debarred from coming into competition with his professional brethren. Is it because he thinks public vaccinators are capable of enticing patients to desert other practitioners and come to them, or is it because the estimate he has formed of the moral capacity of his professional brethren is so low that such work as vaccination is too great to be trusted to them without supervision and inspection by Government officials? Perhaps we may next so far advance our ideas that catheterisation, &c., will come to be considered specialities, and we may read as an advertisement: Public Catheterisers; must give whole time to duty and engage not to practise privately; salary £400. Apply to Town Clerk X.—With apologies for the length of my letter,

I am, Sirs, yours faithfully,

April 27th, 1896. ONE WHO KNOWS NOTHING.

MEDICAL ADVERTISEMENT.

THE following advertisement appears in the *Hobart Town Clipper*:—

[A CARD.]

CHARLES E. BARNARD, M.D.,
Physician and Surgeon,
136, MACQUARIE-STREET, HOBART.

DR. BARNARD having returned from visiting the several hospitals in Sydney and Melbourne, where he has been studying the latest developments of treatment in all branches of Medicine and Surgery, has now resumed general practice.

Specialist in Diseases of the EYE and the EAR.

Dr. Charles Barnard appears on the "Medical Register" as M.D. Aberdeen, L.R.C.P.Lond., M.R.C.S.Eng., and L.S.A.Lond., and his procedure to obtain practice will not commend him to the favourable notice of either his university or the corporations whose diplomas he bears.

CONCENTRATED ANTITOXIN.

THE *Philadelphia Polyclinic* states that Dr. Joseph McFarland of Philadelphia has succeeded in producing a diphtheria antitoxin, of which 10 cc. equal 2000 immunity units. We may add that similarly good results have been obtained in London by Dr. Cartwright Wood, whose methods were described in THE LANCET of April 11th and 18th.

"HEALTH NOTES."

DR. A. C. DUTT sends us a little pamphlet which he has issued for visitors to the seaside, with special reference to Whitby and district. It consists of brief hygienic instructions with the object of enabling the holiday-maker to take his holiday with due regard to physiological laws and without that incessant turmoil whereby the health is injured rather than recuperated. The little pamphlet is clearly written, but Dr. Dutt should remember the obvious objections that may be urged to this kind of literary endeavour.

"SKIN AFFECTION PRODUCED BY WORKING IN TEAK."

To the Editors of THE LANCET.

SIRS,—As the result of personal experience during five years' amateur cabinet making in spare time I can assert—(1) that no sort of skin eruption ever appeared; (2) that any incised wounds if promptly and firmly closed and kept in apposition invariably healed by first intention, i.e., in a few hours; (3) that splinter wounds and deep abrasions incidental to colonial "roughing it" healed as usual without the least suppuration; and (4) at one time I had my nose broken, with severe lacerations of the nasal mucous membrane, from a polo ball, and in consequence of facial ecchymosis and effusion was unable to go out for some days; during the whole of this time I was working in, generally sawing, very dry teak, the fine sawdust found its way into the air passages, &c., but never any discomfort from nasal catarrh or other minor trouble was experienced. For purposes of instruction I very frequently found myself in cabinet makers' workshops; the men would often show me their minor ailments and injuries, even partial losses of digits, &c., and not once did I see any eczema or other skin affection, or ever any suppuration or delay in healing beyond what would be expected in lacerated wounds, and the men never even suggested that when working in teak they were subject to any such disability or annoyance. From results of my own observations, then, I regard the assertions as to the evil effects of teak with absolute incredulity. I may say that the acquired manual dexterity I have since found absolutely invaluable.

I am, Sirs, yours truly,

April 27th, 1896. M.R.C.S., &c.

Sligo.—(1) We refer our correspondent to two excellent lectures by Dr. H. W. G. Mackenzie which appeared in THE LANCET of Sept. 13th and 20th, 1890. Electricity has been useful. The utility of the administration of thyroid extract is not supported by sufficient experience, but benefit is said to have followed it. See Neale's Digest (1837: 5, and the cross references). (2) Our correspondent should send notices to his own patients. Advertisement in a newspaper is decidedly objectionable.

Inquirer should communicate with the Colonial Office. The salaries commence at £200, but as private practice is allowed the best colonies are the best populated.

F.R.C.S. should apply to the Emigration Offices at the Port of Clearance, or to Emigrants' Information Office, 31, Broadway, Westminster.

Dr. James Blair Hartley.—The case is one for not pressing any claim, but graciously accepting accidents and the courteous statement of them.

Mr. W. Downing.—We have no knowledge of the institution in question.

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, April 30th, 1896.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb	Wet Bulb	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Rainfall.	Remarks at 8.30 A.M.
Apr'l 24	30·26	S.W.	44	42	70	59	41	...	Hazy
,, 25	30·08	S.W.	51	49	95	62	44	...	Fine
,, 26	30·02	S.W.	58	54	100	67	53	...	Fine
,, 27	30·10	S.W.	55	52	99	69	50	...	Cloudy
,, 28	29·89	W.	56	50	112	65	53	...	Cloudy
,, 29	29·70	N.W.	53	46	107	61	46	...	Fine
,, 30	29·81	N.	50	45	91	55	42	0·04	Cloudy

During the week marked copies of the following newspapers have been received:—*Hastings News, Kettering Guardian, Birmingham Gazette, Newcastle Chronicle, South Wales Echo, Oban Times, Glasgow Record, Lincolnshire Echo, Express and Star, Derry Standard, Scotsman, Hull Daily Mail, Northern Whig, Western Mail, East Anglian Daily Times, Berkshire Chronicle, Bristol Times, Leicester Post, Times of India, Architect, Sussex Daily News, Western Daily Press, Chester Chronicle, Pioneer Mail, Westminster News, East London Observer, Builder, Glasgow Herald, Oswestry Advertiser, Liverpool Daily Post, Citizen, Sanitary Record, Sun, Bristol Mercury, Mining Journal, Morning, Leamington Advertiser, Le Figaro, Yorkshire Post, Reading Mercury, Leeds Mercury, City Press, Nottingham Daily Guardian, West Middlesex Standard, Weekly Free Press and Aberdeen Herald, Hertfordshire Mercury, Local Government Journal, Surrey Advertiser, Gloucestershire Chronicle, The Baillie, Leeds Daily News, Australasian Medical Gazette, Elgin Courant, Falkirk Herald, Manchester Courier, Kelso Mail, Tasmanian Mail, Guernsey Star, Shrewsbury Chronicle, Public Health, Cromer Post, Norfolk Daily Standard, Folkestone Express, West Briton Advertiser, Wellington News, Harwich Free Press, &c., &c.*

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